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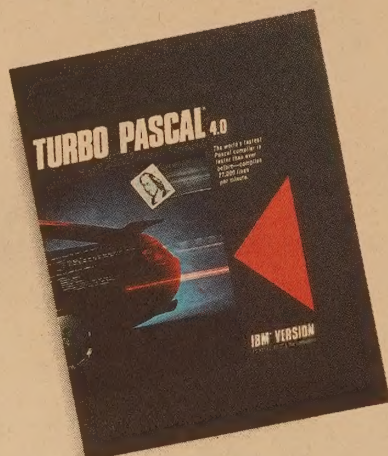
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Size of Executable File	2224 bytes	11682 bytes
Execution speed	9.3 seconds	9.7 seconds

Sieve of Eratosthenes, run on an 8MHz IBM AT

Since the source file above is too small to indicate a difference in compilation speed we compiled our CHESS program from Turbo Gameworks to give you a true sense of how much faster 4.0 really is!

Compilation of CHESS.PAS (5469 lines)

	Turbo Pascal 4.0	Turbo Pascal 3.0
Compilation speed	12.1 seconds	35.5 seconds
Lines per minute	27,119	9,243

CHESS.PAS compiled on an 8 MHz IBM AT

*Run on an 8MHz IBM AT

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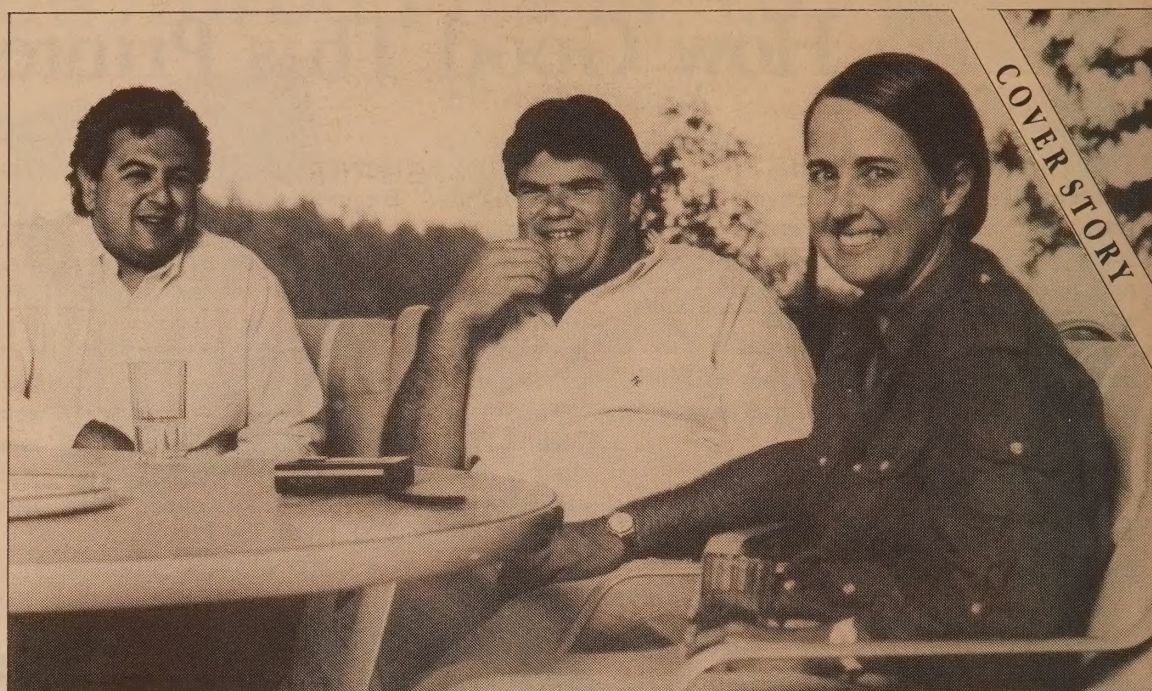
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32 New Worlds For Borland Paradox And Philosophy With Philippe Kahn

By Dennis Erokan and
Mary Eisenhart

Once known chiefly as a maverick software company flying successfully in the face of tradition, Borland International is poised to take on the corporate world, having recently acquired Ansa Software and its revolutionary database Paradox. Borland's founder and president, the ever-outspoken Philippe Kahn, comments on the transition to a new world, the state of the industry, and life at the top.



Our morning with Philippe

COVER STORY

HANDS ON



Paradox represents a new generation of databases — powerful and flexible, yet accessible. See page 42.

42 The Joys Of Paradox

By Birrell Walsh

Ansa's database manager is powerful, flexible and feature-laden, but you don't have to be a programming wizard to use it.

48 DataFrame XP40+40

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By Mary Eisenhart

Sure it's a good hard disk, but what's really exciting is that it lets you use your tape backup as just another drive on the Mac desktop — so you can back up single files, open documents from the tape drive, and enjoy all manner of other conveniences.

54 All My Modems

By Mary Eisenhart

Three habit-forming little devices for Mac users (though IBMers can use them too) — each with its own advantages.

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By Woody Liswood

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By Robert Beauchamp

Now a giant network, Tymnet was once a relatively minor portion of a mainframe timesharing service. Today Tymnet continues to deal with the changing needs of business — and some unexpected road hazards like the FCC's plan to raise online rates.

55 MicroTimes 100 Ballot

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By John C. Dvorak

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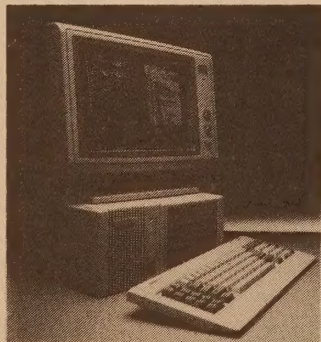
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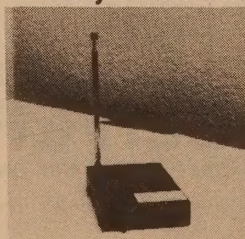
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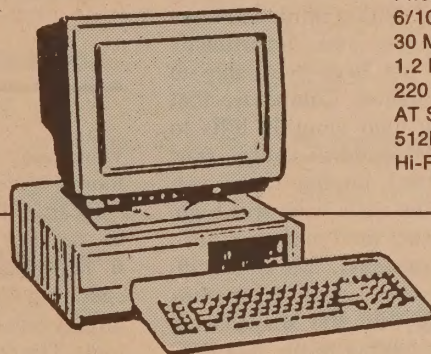
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BUT JAN LEWIS SAYS...

Marketing Myopia Strikes Again

The story about Tymnet in the last issue of *MicroTimes* was a good story. Unlike its more fortunate child, however, Tymnet's parent company, Tymshare, did not dodge a bullet in the early 1980s. Truth is, the company failed to respond to a changing environment for a period that spanned several years. Tymshare suffered from a case of a classic disease known as Marketing Myopia.

Marketing Myopia, first described in a paper written by marketing guru Theodore Levitt and published by Harvard Business Review, is, very simply, the failure to understand what business you are in. Tymshare thought it was in the timesharing business. In fact, it was in the business of providing computerized analysis tools to business customers.

Let me explain the syndrome by examples. The railroads are a classic example of Marketing Myopia. The railroads defined their business incorrectly. They thought they were in the railroad business instead of understanding that they were in the business of transporting passengers and freight. Had they realized that they were in the transportation business instead of in the railroad business, they would have seized opportunity from the growth of the airline industry.

Tom O'Roarke, the founder of Tymshare and one of the chief creators of the timesharing industry, was a visionary. Nearly 20 years ago, he left a successful career with GE to fulfill his vision. His vision was to provide computer timesharing services to companies and departments that did not have access to the power of computers, due to the high cost and the lack of availability of mainframe computers.

And fulfill that vision he did. Tymshare became an industry leader by providing an impressive set of product offerings. Through phone lines, customers worldwide had access to a series of DEC PDP-10 mainframes, IBM 370 mainframes, and one of the most sophisticated set of analysis tools anywhere, including information analysis and retrieval, relational database, multidimension modeling, and proforma (spreadsheet) tools. The company even built its own network to maximize access and reliability and to minimize access costs.

So successful were Tymshare and other timesharing companies, that by the mid 1970's, users of timesharing services including almost every company in the Fortune 500, with Tymshare claiming nearly half of them as customers.

But toward the end of the 1970s, trouble started brewing. Companies like Digital Equipment (DEC) and Data General were becoming quite successful at selling minicomputers into businesses and departments that would not have been able to afford mainframes. Companies that were paying high monthly bills to timesharing vendors could start thinking about buying their own minis. But the costs were still high, and the impact on Tymshare's business was minimal. More significantly, however, new companies were getting into the timesharing business by buying minis like DEC PDP-11s and later DEC VAXes, and offering timesharing services on minis at a lower cost than companies like Tymshare could provide on mainframes. Companies like Ross Systems in Palo Alto, California, did just that, and they started nibbling away at Tymshare's market share.

But it was just a nibble, and the entire market for on-line information services was growing at such a fast pace that even the small impact on market share left plenty of room for growth. The growth of the total market was so great that that this small intrusion into market share was not significant enough to shake Tymshare out of complacency.

But if the threat from the minis wasn't great enough, a more significant threat was looming on the horizon: the microcomputer. As Tymshare salespeople walked up and down the halls of the Fortune 500, they would occasionally see some maverick financial analyst using VisiCalc on an Apple II.

This phenomenon was treated with scorn and derision—a classic symptom of Marketing Myopia. The railroad companies treated airplanes with the same ridicule. The idea of a 100-ton steel tube flying at 35,000 feet carrying passengers and freight was ludicrous. To Tymshare, the same held true for VisiCalc on an Apple II. It was slow, memory-limited, clunky, klugey, and required the user to develop some technical knowledge of how the system worked.

Marketing Myopia is, very simply, the failure to understand what business you are in. Tymshare thought it was in the timesharing business. In fact, it was in the business of providing computerized analysis tools to business customers.

Tymshare's mainframe tools were far more sophisticated.

It's true. Tymshare's products were far superior to VisiCalc on an Apple II. However, many companies were spending \$5,000-\$30,000 per month on Tymshare's financial analysis tools. The cost of purchasing a microcomputer solution was frequently less than the cost of a single month of using Tymshare!

Not only was the price differential so great; on top of that, there was a psychological advantage to using a micro. With timesharing, the customer paid for computer resources as they were used. With a micro, there were no incremental costs. Without the "taxi meter" of connect time and cpu time running, the user had more personal control, could do more what-if analyses, could do more "on-line thinking." In short, the user could do more for less money.

In the long run, the effect of micros on Tymshare was devastating. It didn't need to be that way. Tymshare could have taken the birth of the micro as an opportunity to fill customer needs in a more cost effective way. Tymshare did not stop growing because the need for information analysis declined. It stopped growing because the need was filled by other businesses instead of by Tymshare.

Lord knows, the micro industry certainly could have benefited from a company like Tymshare becoming a distribution channel for micros. Tymshare already had distribution into Corporate America through a superb sales staff that understood how to sell computer services to the Fortune 1000. The distribution channels for micros, remember, were just forming. The emerging retail channel

was not only fragmented, but was not serving the needs of the business community very well. By and large, computer buyers dreaded a visit to the computer retail store, characterizing the salespeople as used car salesmen, and getting incorrect and inconsistent information from store personnel who were either arrogant, ignorant, or both.

What Tymshare lacked during the onslaught of competition from minicomputers and microcomputers was not opportunity. It lacked the same vision and boldness that Tom O'Roarke had when he built the company and the industry.

Of course, the natural question one might ask is: Wouldn't Tymshare have killed their existing product lines if they had embraced mini and micro computers? The answer is: Of course, they would have. And that is exactly why they should have developed these products before other companies did. For their own good, they needed to erode their own product line before someone else did. Instead, they stuck their head in the sand. They ignored emerging alternative solutions to their customers' needs.

This is a country where invention, creativity, and enterprise flourish. If you don't provide the products and solutions that your customers need, someone else will. Companies that don't realize this will end up converting opportunity into failure. And no amount of wishful thinking will stop that. □

Jan Lewis is a leading analyst and commentator on the microcomputer industry, known for her keen insights and understanding of the industry's trajectory. As president of Lewis Research Group, Ms. Lewis serves as marketing consultant to a variety of high tech companies.

CALENDAR OF EVENTS

September 26 San Bernardino Computer Show. National Orange Show Grounds. Contact Golden Gate Shows (415) 388-8893.

September 27 Educational Software Disk Festival. Lakewood California. For information call Super School Software at (213) 594-8580.

October 3 Computer Show. CSUN North Campus, Northridge, CA. Contact Microshows (800) 433-7469.

October 3 Ventura Computer Show. Ventura Fairgrounds. Contact Golden Gate Shows (415) 388-8893.

October 10 Computer Swap. LA County Fairgrounds, Pomona. Call RK Productions at (800) 252-7927 for information.

October 11-14 Third Annual Software Publishers Association Fall Conference. Cambridge Massachusetts. Contact the SPA at (202) 425-1600.

October 13-16 Computer Science Engineering Short Courses. UCLA Campus. Contact the UCLA Extension Department of Engineering and Science, P.O. Box 24901, Los Angeles, CA 90024. (213) 825-3858.

October 21-23 IFIP International Conference On Computers And The Law. Santa Monica. Contact Michael M. Krieger (213) 208-2461 or J.J. Buck BloomBecker (213) 850-0509.

October 23-25 Independent Computer Consultants Association Fall Conference. Westin Hotel, Stamford Conn. Contact the ICCA at (314) 997-4633.

October 31 Computer Swap. LA County Fairgrounds, Pomona. Call RK Productions at (800) 252-7927 for information.

October 31 San Bernardino Computer Show. National Orange Show Grounds. Contact Golden Gate Shows (415) 388-8893.

November 4 Financial Strategies For Today's Global Markets. First of three sessions. Red Lion Inn, 3050 Bristol Street, Costa Mesa, CA. Contact Dana Shappro, National Seminar Director, Peat Marwick High Technology Practice, 1800 Embarcadero Road, Suite 280, Palo Alto, CA 94303.

November 7 The Computer Sales Network. Los Angeles Convention Center, Petree Hall. Contact MicroSwap (213) 746-7394.

November 11 Manufacturing A Competitive Weapon. Second of three sessions. Red Lion Inn, 3050 Bristol Street, Costa Mesa, CA. Contact Dana Shappro, National Seminar Director, Peat Marwick High Technology Practice, 1800 Embarcadero Road, Suite 280, Palo Alto, CA 94303.

As a community service, **MicroTimes** lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month, two months before the cover date of the issue in which you'd like it to appear (i.e. the deadline for the March issue, distributed during February, is January 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

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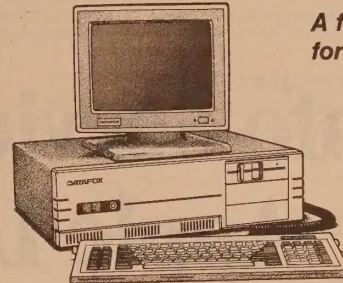
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No Info Services For Baby Bells; Apple Loses Big Order

Judge Greene Squelches Baby Bells

WASHINGTON (NB)—In a ruling that has infuriated regional telephone operating company executives, U.S. District Judge Harold Greene has barred the seven regional Baby Bells from offering information services, such as electronic yellow pages. Rather, said Greene, the regional phone companies may offer only voice storage services and such services as electronic telephone answering.

Greene presided over the AT&T breakup. As a result, he is the overseer of what the Baby Bells can offer. Greene's ruling also prohibits the regional phone companies from entering the long distance business and from manufacturing.

The regional telephone companies are expected to appeal the ruling. Ameritech Corp. executive Ken Millard said his company was "appalled by the judge's order." Pacific Telesis Executive Vice President Arthur Latino said his company is "deeply concerned with the outcome and possible consequences" of Greene's ruling. Pacific Telesis was considering entering the videotex market, but the ruling appears to rule that out.

Jobs Predicts Fourth Wave, Launches Adobe Deal

SANTA CLARA, CA (NB)—The reclusive Steve Jobs went public with some bold predictions at this year's Seybold Desktop Publishing Conference. He hinted that his own firm NeXT's machine will have a broader and more revolutionary appeal than has previously been predicted, and will be a part of a "fourth wave" of computers, following the trails left by the Apple II, IBM PC, and the Macintosh. That fourth generation computer will run the UNIX multitasking operating system, have a "user friendly" interface similar to that of the Macintosh, and will connect to other machines in a work group on the Ethernet network.

Most importantly, says Jobs, the new machines will have displays based on Adobe's PostScript page description language. The new Display PostScript, a collaboration between NeXT and Adobe, will provide true what-you-see-is-what-you-get capabilities, and will become the next standard for displaying graphics, he said. Adobe says it will demonstrate Display PostScript next summer. Jobs' UNIX workstation is expected to be available

some time early next year.

Analysts were impressed by Jobs' apparent vision, but there were skeptics in the crowd. One vendor complained that Adobe will make licenses for Display PostScript as expensive as the current PostScript for laser printer is. Charles Ying, co-founder of the electronic publishing company Atex, spouted, "Adobe is not buyer-friendly." Further, he added, "The number of people that have to read the PostScript manual is a total waste of human resources."

Jobs snapped back, "I don't think you know what you're talking about."

Jobs refused to comment on the coming book *Odyssey: From Pepsi To Apple* by Apple chief John Sculley, who documents the nasty split between the two in September 1985. "It's more fun to shape the future than regurgitate the past," said Jobs.

Apple Loses Mac Order In Guide Backlash

BELLEVUE, WA (NB)—A major automobile manufacturer has decided against some 20,000 orders of Macintoshes in favor of the new IBM PS/2 series for its internal operations, according to Alan Boyd, president of Owl International. The car company's decision, he says, was due to Owl International's switch in research from Macintosh to MS-DOS versions of Guide, its HyperCard-like software development tool, which has become a hot item among car companies. Owl International decided against further development of its Macintosh version of Guide just 30 days prior to Apple's release of the competing HyperCard. Consequently, to utilize Guide, the unnamed car company, whose identity will be revealed at the Paris Auto Show in October, will purchase only IBM products.

Owl's Guide has an impressive track record in the auto industry. The Guide is in use by Ford Motor Company, where, running on HP Vectras, it will be installed in service bays as a diagnostic tool at authorized Ford service centers nationwide this fall.

Boyd told NEWSBYTES that he's canceled further research into the Macintosh Guide, and blames Apple. "It's a consequence of Apple deciding to compete against software companies. You can't fight something that's bundled free with Macintoshes. They've pushed us into the IBM and UNIX markets," Boyd told NEWSBYTES.

While not accusing Apple of stealing his ideas, he does say, "They (Apple) had a working Macintosh Guide in their hands last November. And like all licensed developers for the Mac, we had to give

them a copy of our intimate business and development plans." He has not ruled out legal action but says he's not considering it, "although we've had a lot of mail telling us to sue Apple."

Owl will continue to support the Macintosh Guide versions it has sold, and will ship version 2 for the Mac in October. But the company plans to develop almost exclusively CD-ROM and MS-DOS applications of Guide for the IBM line.

CONTACT: Alan Boyd, OWL INTERNATIONAL, 206/747-3203

ComputerLand To Sell Company-Owned Stores

OAKLAND, CA (NB)—ComputerLand Corporation has shocked the business world by announcing its intention to sell all its 45 company-owned stores, a move which will make the firm merely a parent company of nearly 800 franchises. The move surprised many analysts, who say ComputerLand had been talking recently about hiring more people to open more company-owned stores.

ComputerLand is in final negotiations with potential buyer and venture capital firm E. M. Warburg Pincus to sell the entire corporation. Warburg Pincus reportedly favors the sell-off because it will reduce friction between the company and its franchisees. That friction is mainly due to conflicts between purchasers for the company-owned stores and those of the individual retailers. The news was greeted by a round of applause by the franchisees. Says one, Bob Zimmerman of ComputerLand Santa Clara, "It looks very positive to us."

California Computer Privacy Bill Defeated

SACRAMENTO, CA (NB)—A bill which would have extended First Amendment rights to include electronic communications via computer or teletext systems has been voted down in California's Assembly. The defeat came at the hands of the state's Republicans, who voted down the state constitutional amendment. Backed by such groups as the ACLU, The Independent Computer Consultants Association, the California Library Association and others, the amendment, introduced by Assemblywoman Gwen Moore of Los Angeles, had passed the Assembly Utilities and Commerce Committee, and had it passed the Assembly's Elections, Reapportionment, and Constitutional Amendments Committee it would have gone to a public ballot for California voters.

Moore blames the defeat on a general apathy on the part of computer users, and a lack of publicity. The measure may be reconsidered in January.

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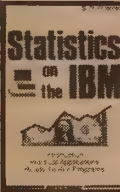
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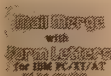
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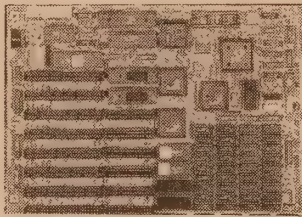
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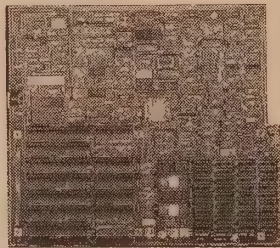
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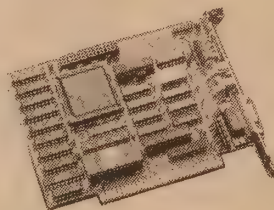
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AT&T-Sun Alliance Revealed

MOUNTAIN VIEW, CA (NB)—Sun Microsystems has teamed with AT&T to develop a line of high-performance workstations to be sold by AT&T, according to the San Francisco Examiner. The report says the RISC-based workstations, incorporating Sun's SPARC chip, a competitor to the 68000 microprocessor line from Motorola, would give AT&T a needed shot in the arm in its battle to be taken seriously in the PC and computer market. Neither AT&T nor Sun will comment on the report, but it is known that the two firms have been working together on a new version of the UNIX operating system.

Toshiba Considers US Intro Of 386 Portable

IRVINE, CA (NB)—Toshiba America officials are debating whether to introduce their T5100 80386-based portable PC in the U.S. The 15-lb. T5100, with a healthy 2 megabytes of RAM, a 40-Mb hard disk and one 3 1/2" floppy drive, is producing waves of excitement in Europe, where it is expected to go on sale at the end of October.

A Toshiba spokesman says several factors will go into the decision about whether to introduce it here, and they all boil down to market demand and politics. The powerful PC is high-priced in Europe—U.S.\$7,600—and might have to be discounted to sell to Americans. Also, the market for 386-based portables is still in its infancy. Dan Crane, Toshiba America's VP of marketing for PCs, says Toshiba may show the model at COMDEX/Fall in Las Vegas to assess public response.
CONTACT: TOSHIBA AMERICA, 714/583-3000

PostScript Clones Unveiled

SANTA CLARA, CA (NB)—The Seybold Conference was a forum for a variety of new PostScript clones, a development which heralds the dawn of less expensive PostScript-compatible laser printers. Control-C of Portland, Oregon showed off CCS-Page, which was demonstrated on two printers from Nissho Electronics of Irvine, CA. The language can be made PostScript-compatible, says Joe Friedman, Nissho's marketing director. The language is to be made available to OEMs in January. Also announced were PostScript clones from Phoenix Technologies and The Company. And Printware of St. Paul, Minnesota showed PrintScript, its PostScript-like option on its current laser printer.

Adobe Alliance With Quadram and QMS

MOUNTAIN VIEW, CA (NB)—Adobe has entered into licensing agreements with two firms that promise to produce the world's cheapest PostScript laser printer upgrade and the world's first color PostScript printer.

Adobe has announced that Quadram, of Norcross, Georgia, has licensed PostScript for its new QuadLaser PostScript Printer. The QuadLaser PostScript will retail for \$3,995 and the earlier model of this laser printer, the QuadLaser I, will offer a PostScript upgrade for only \$1,895. That makes it the lowest-priced PostScript upgrade available on the market. Both the QuadLaser PostScript printer and the upgrade are scheduled to ship in November.

Meanwhile, QMS, Inc. has announced plans to manufacture and market a color printer utilizing Adobe's PostScript interpreter. Based on the 300 dots per inch Mitsubishi G650 color thermal marking engine, the laser printer will have 35 resident fonts, and will be released in the first quarter of '88. No price has been announced.

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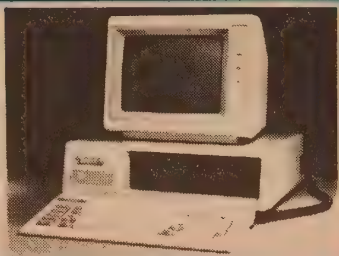
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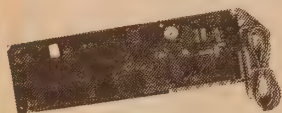
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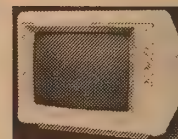
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New Mac Interleaf Software

SANTA CLARA, CA (NB)—Interleaf, of Cambridge, Massachusetts, famous for \$15,000 publishing software for sophisticated Sun, DEC, and IBM workstations, has announced a version of its software for the Macintosh II which has nearly all the features, but a fraction of the cost—\$2,495—of its predecessors. Available in November, the software is said to have full word processing capabilities and state-of-the-art graphics creation, all in one integrated program. It is aimed at book and manual creators with its ability to automate page layout up to thousands of pages. The software requires a Macintosh II with 5 megabytes of RAM and a 40 megabyte hard disk. Said John Sculley of the program, *Interleaf Publisher*, "It's probably the single most powerful application that has ever been put on a Macintosh."

Ethernet On Common Phone Lines

SANTA CLARA, CA (NB)—Local area network manufacturer 3Com has announced a new system to allow computers on a network to share information via common telephone system wiring. The new technology, developed with Digital Equipment Corporation, is considered a breakthrough; common phone wiring is far less reliable than shielded coaxial cables conventionally installed to connect networks. Information travels as fast as 10 million bits per second, but making it work wasn't easy. Says Harry Saal of Network General of Mountain View, "It's a bit like driving 180 miles per hour down a two lane road. It can be done, but you better have nerves of steel." The announcement is expected to enhance the attractiveness of Ethernet for offices interested in networking, providing them with a variety of options to connect their computers.

Softview To Sue Apple

CAMARILLO, CA (NB)—Softview President Susan Morgan is reportedly ready to take Apple's Claris software spin-off to court over confidential information it allegedly has regarding Softview's marketing and product plans.

The spat began when Softview approached Apple's John Zeisler regarding a co-marketing agreement between Softview and Apple involving Softview's *MacInTax* and a generic forms generating program. "He was really excited about it," says Morgan. Things got less interesting, however, when Ziesler, suddenly of Apple's Claris Corporation, demanded the source code for the products, she reports. Softview balked; within weeks Claris was courting other companies specializing in forms generating software. "They have solicited proprietary information under the guise of a co-marketing agreement," says Morgan. Steaming mad, she's preparing legal action.

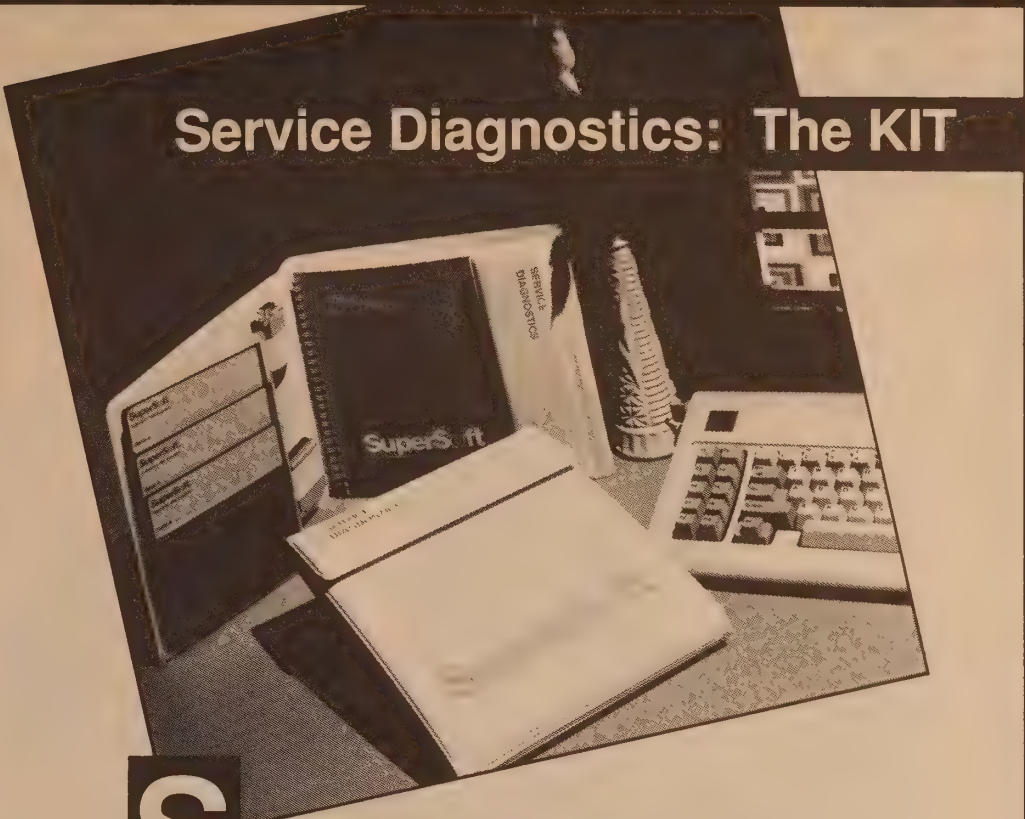
Zeisler, who could not be reached for comment by NEWSBYTES, has stated of the dispute, "I'm not aware of any conflict of interest because I'm not aware of any confidential information that she gave to me."

CONTACT: Susan Morgan, SOFTVIEW, 805-388-2626

AppleFest Report

SAN FRANCISCO, CA (NB)—The revived AppleFest, September 18-20 at San Francisco's Civic Center, was advertised with a more than \$100,000 budget by Apple and Cambridge Marketing, and while official crowd figures have not been released, most exhibitors NEWSBYTES contacted said they were disappointed with the turnout. It was clearly not attracting (nor designed to attract)

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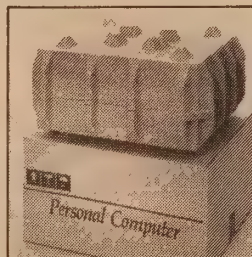
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the average DP professional crowd. Primarily featuring educational products in conjunction with Computer Learning Month festivities, the AppleFest featured a wide variety of school and home learning software products, a classroom of the future exhibit, and lots of families, kids in tow.

Some new product announcements worth mentioning:

Activision demonstrated the first two of what it promises will be a series of "stackware" products for the Macintosh—*Focal Point*, a desktop management system complete with calendar, phone dialer, notepad, name and address file, etc., and *Business Class*, a program for travelers providing them with information about climates, currency exchanges, online system connections for airline and hotel info, and other important data. *Business Class* is scheduled to ship in December at \$70; *Focal Point* will cost \$100 and will also go on sale in December.

Applied Engineering had its first public showing of *PC Transporter*, a hardware/software combo that turns an Apple IIe or IIGS into an IBM-compatible capable of running most MS-DOS applications. Slated for shipment at the end of October, the *PC Transporter* is priced at between \$489 and \$609, depending on RAM memory options from 384K to 768K; the IBM-type disk drive, with the Apple-to-IBM translator card built in (required hardware for an Apple IIe configuration) costs \$269. Chuck Carpenter of Applied Engineering told NEWSBYTES he's received several hundred orders so far, and the product is available mail order from Applied Engineering or in selected retail stores.

CONTACT: APPLIED ENGINEERING, Carrollton, Texas 214/241-6060

Brøderbund demonstrated *Jam Session*, a music program for the Macintosh just acquired from Bogas Productions. Featuring the ability to play six voices and a variety of synthesizer sounds at once, a riff editor, and preprogrammed compositions in rock, jazz, country or classical, *Jam Session's* cute feature is an on-screen band that plays your music. (For example, chickens cluck in response to your hitting keys during the country jam.) Scheduled to ship in October and will retail for \$49.95. (NEWSBYTES also heard that Bogas' high-level music program, *Studio Session*, will become a Brøderbund offering sometime next year. That is a far more sophisticated program designed for music editing and composition in conjunction with MIDI-interfaced equipment.)

At least three desktop publishing packages were on display. **Softsync's** *Personal Newsletter* provides the II with word wrap, cut and paste, unlimited columns, and newspaper style headlines. It imports files from *Print Shop*, *Newsroom* and *Dazzle Draw*, and retails for \$59.95. The *Personal Publisher* came from **Milliken Publishing** of St. Louis. This \$195 desktop publishing program features all of Softsync's assets and comes with a 500-picture clip-art disk, thesaurus, and spelling checker and dictionary. It requires a IIGS with 1 megabyte of RAM. **Springboard Software**, Minneapolis, showed *Springboard Publisher*, a \$139.95 program which offers all of the above, plus an integrated word processor and on-board graphics tools. Additionally, Springboard is offering laser drivers to output the product to a PostScript printer.

Phone-Based Videotex Service

MILL VALLEY, CA (NB)—Move over Minitel, it looks like America is about to get its own videotex system via the phone lines. Guinness Videophone Telecommunications Educational Network is about to launch a regional videotex service for the Marin County and San Francisco areas. Subscribers will be required to rent a videophone for \$10 a month to hook up to the service, which will offer

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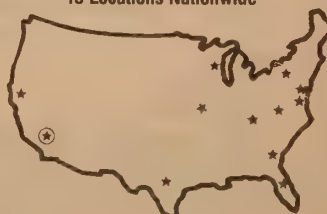
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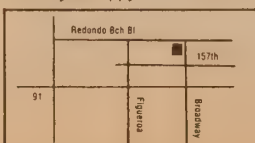
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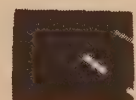
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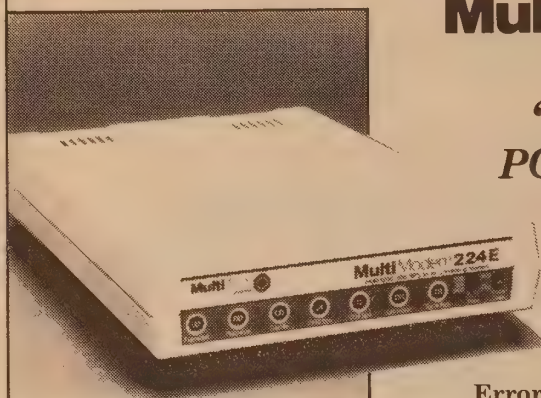
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The searchable yellow pages will provide specific information tailored to your individual requests, according to Lawrence Guinness, founder of the company. "For instance, if you want a restaurant with a deck that serves Eggs Benedict in Sausalito, you'll be able to find it." The yellow pages will be composed of advertisers who pay a modest fee to list details about their businesses.

Additionally, the network will feature an airline reservation service, a library of topics, electronic mail, computer "chat," and educational programs geared toward grade school children.

The videophone will have several uses besides viewing text. It will be able to record up to 90 phone numbers and will have a calendar which can be programmed to "beep" a reminder at you, even when the unit is not in use.

Guinness told NEWSBYTES the service will be publicly launched within two months. It has been under development since 1971. If successful in the Bay Area, the network will expand to include other regions of the country.

CONTACT: Lawrence Guinness, GVTEN, 415/381-0111

Software Search Service

YUBA CITY, CA (NB)—The name is Softwhere? and it's a firm designed to track down any software need you can name. "We keep information on thousands of programs," says founder Shareen Punian. "Many computer users, especially new ones, are baffled by software packages available and often make poor choices." Softwhere? sounds like an unique way around this dilemma. To get a free brochure "Guide for Selecting Computer Software" write Shareen at the address below.

CONTACT: SOFTWHERE, PO Box 3336, Yuba City, CA 95992 916/674-3688

Wozniak's President Quits

LOS GATOS, CA (NB)—Just as Steve Wozniak's CL9 is about to ship its long-awaited remote control device, the firm's president Sam Bernstein has quit. Sources say Bernstein and Wozniak had it out over a manufacturing problem that has since been resolved, but the dispute left hard feelings. "It was either him or me," Bernstein says, but will not give any details of the falling-out with the Apple founder. The \$199 remote control device manager is slated for shipment this month to Circuit City chain stores and the Sharper Image catalog company.

Pixar Sues French News Service

SAN RAFAEL, CA (NB)—Steve Jobs' computer graphics company Pixar has launched a trademark infringement suit against the French news service Agence France-Presse and its Washington bureau. Pixar objects to the service's use of the name Pixar for its own computer system being sold to its customers. The nine-count complaint was filed in federal District Court in San Francisco.

Apple Buys Chromaline

LOS ALTOS, CA (NB)—In its fourth acquisition since starting its Strategic Investment Group, Apple Computer has made a major investment in Chromaline, a small company designing a device that will make 35mm slides from the display on a Macintosh. Details of the device, and the acquisition, are not available. The other three firms in which Apple has invested are Forethought, Sybase, and Touch Communications.

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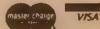
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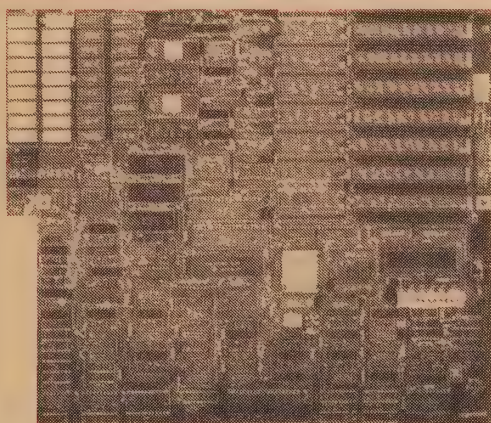


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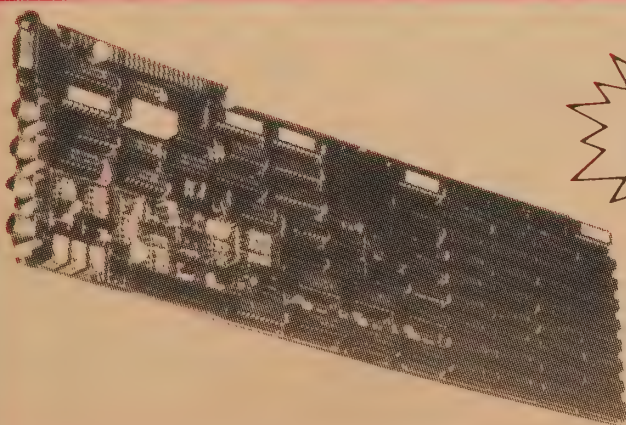
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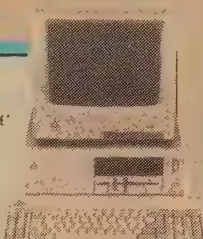
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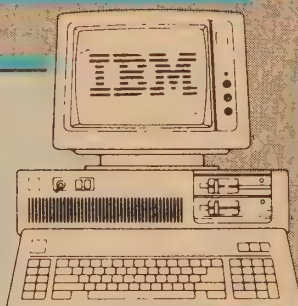
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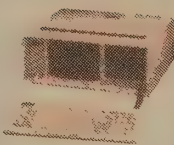
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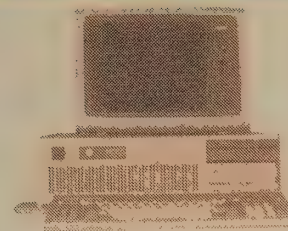
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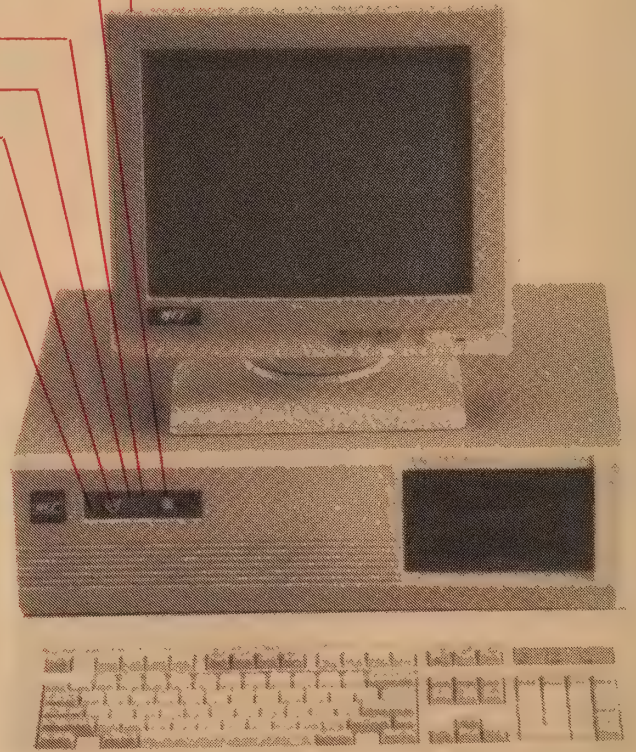
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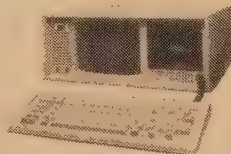
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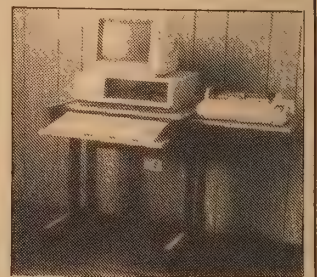
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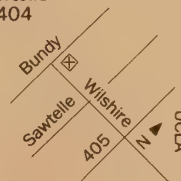
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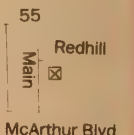
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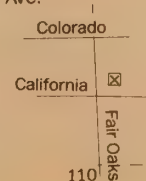
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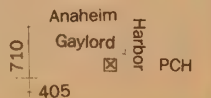
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Apple Acquires IBM Veteran

CUPERTINO, CA (NB) — Apple Computer has announced the appointment of Harold Copperman, a 20-year Big Blue veteran, as manager of Apple's east coast sales, support, and training group. Until recently, Copperman served as IBM's director of marketing for higher education and is very experienced with the college and university marketplace. That's an important source of Apple's income and this appointment is likely to enhance it even further.

Apple Bids For Army Contract

CUPERTINO, CA (NB) — Apple has teamed up with Magnavox to bid on an \$800 million contract to supply software and hardware for the Army's battlefield command and control system project. Apple's offer reportedly includes 18,000 Macintosh computers. Alone, Apple might have a slim chance, but teaming up with Magnavox, a large defense contractor, provides it with a better chance of success. Hewlett Packard and Unisys are also expected to bid, according to Charles Berger, VP of market development. The decision is due in the spring.

II Runs IBM Software—Fast

CAMPBELL, CA (NB) — The Apple IIc, IIe and IIGS may become one of the cheapest IBM clones if a Dallas company's product is a success. Designed by The Engineering Company here, the PC Transporter, to be introduced at Applefest in San Francisco September 18-20, will enable a IIc, IIe and IIGS to run "virtually 98%" of all IBM software, a spokesman told NEWSBYTES. The add-in board, which has adapters for monitors and IBM keyboard, will cost around \$500. Marketed by Applied Engineering of Dallas, Texas, the PC Transporter will also enable the II line to run IBM software three to four times faster than an IBM XT.

The IIc and IIe computers will require an IBM-type disk drive to run programs, but the IIGS' 3½-inch disk drive will run 3½" size MS-DOS 3.3 diskettes as well as Apple programs, says an Engineering Company spokesman. For more on the PC Transporter, see the current issue of A+ magazine. CONTACT: Dan Pote, APPLIED ENGINEERING, 214/241-6060.

NEWSBYTES SOUTH

By Dana Blankenhorn

Low-Power 80286 Chip

MELBOURNE, FL (NB) — Harris Corp. has unveiled a low-power, CMOS (Complimentary Metal Oxide Semiconductor) version of Intel's 80286 microprocessor, the chip used in the Compaq Deskpro 286 and compatibles.

Michael Graff, Harris' VP for semiconductor marketing, said the new chip is ideal for harsh environments. Analyst Mel Phelps of Hambrecht & Quist, San Francisco, said the new chip will spur development of AT-compatible laptops. Such machines would be very powerful, because the new chip can run at a blistering 16 MHz, but they'd also emit little radiation, and they'll ignore extraneous noise. (The latter points will make the new chip a big seller to cops, spies, and the military.) Both Harris and Intel will be able to manufacture the new chip.

German Teens Crack NASA

Washington, DC (NB) — A group of West Germany teenagers from the Chaos Computer Club penetrated a NASA network recently, saying they were doing it to "test the security."

What they got into was SPAN Net, a computer network with about 700 nodes, which is actually

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based at the Goddard Space Center in Maryland. All that's in there is unclassified data, space science information, and post-flight data analysis. "Anyone with NASA-related research can apply for access to SPAN," says a spokesman, who adds the network runs on DEC VAX hardware. "We picked this up in early August. We picked up three attempts to gain access and put in security precautions so it wouldn't happen." His personal opinion is, "We're happy that they couldn't get back in, and decided to go public." He also said NASA has many other networks, many of them classified and "probably impenetrable. But I don't want to challenge anybody."

How'd they get in? Probably they got a West German NASA licensee, which gave them a visitors' pass, then they created new passwords with unlimited security for themselves, after which getting around the network was easy. CONTACT: NASA, (202)453-8400

Dell's New Systems

AUSTIN, TX (NB)—Dell Computer Corp. aka PC's Limited, is putting together the most powerful equipment for which there are parts in a bid to out-Compaq Compaq and round up higher sales in the MS-DOS market. On September 14 the company announced three new systems. The PC's Limited 286/12 will feature a 150-megabyte ESDI hard drive. (Enough storage for all the graphics files on an 80- page newspaper.) The prices are: \$4,399 in monochrome, \$4,889 with a VGA monitor. There's also a fast 8088-based box, the 8088 Turbo, with a 40-megabyte hard drive, at \$1,399.

CONTACT: John Elliott, DELL COMPUTER (512) 339-6800

QMS Advice To PostScript Users: Wait

MOBILE, AL (NB)—QMS, which turns Japanese laser engines into American laser printers, says its new \$2,000 Kiss Plus, with three plug-and-play "personality cards," will mainly support the printer routines of older dot-matrix and letter quality printers. The H-P LaserJet, however, is supported on two plug-in "Personality Cards" which will be released October 31. (If you just want to emulate the Epson FX-80, QUME Sprint, Diablo 630 or ANSI standards, your "Personality Card," the Model 10, will come out this week.) QMS will also soon release a "Jetscript" card which plugs into your PC (the "personality cards" plug into the printer) and lets your QMS laser printer emulate the H-P LaserJet Series II.

Users who need PostScript emulation are advised to wait, or buy one of QMS' older PostScript printers. QMS promises an announcement within six weeks of a new PostScript machine based on the Canon SX engine, which runs at eight pages per minute.

CONTACT: QMS, (205) 633-4300

FCC Charges Much Ado About Not Much?

International Resource Development, New Canaan, CT, says the market bubble for packet switch networks like Telenet is going to burst by 1991, regardless of what the Federal Communications Commission does about access charges. Cheap fiber, which greatly increases capacity, and ISDN services, which let you share a phone line with your computer, will do the business in, the report says. Over the next four years, however, demand for packet-switch services will grow from \$650 million to \$1,612 million. (If the Baby Bells are

allowed to add competition to the market, the \$5/hour access charge can't be passed through to customers anyway.)

NEWSBYTES EAST

By Ken Maize

Lotus Drops Copy Protection, Adds New Graphics Package

CAMBRIDGE, Mass. (NB)—Lotus Development Corp., the last major holdout in the copy protection dispute, has announced that its next version of 1-2-3 will be copyable. The company said it reached the decision after talking to corporate customers about its upcoming Release 3.0 of the popular spreadsheet. Lotus has earned considera-

ble animosity among users and a reputation for arrogance for its refusal to drop copy protection. Corporate buyers were particularly upset about copy protection interfering with networked applications of the program, sources at Lotus said.

When Lotus unveils Release 3.0, planned for early next year, industry insiders speculate that it will be available for a wide range of computers beyond the IBM PC and clone world. Look for 1-2-3 Release 3.0 on the Macintosh, DEC VAXs, and a UNIX version. Lotus declines to comment on that, other than to repeat that the company is designing a version of 1-2-3 for IBM mainframes.

In the meantime, Lotus has rolled out a new graphics package, Lotus Graphwriter II, an upgrade of the existing Graphwriter product. The new program for PCs requires 512K of RAM and a hard disk. Shipments are to start in October.

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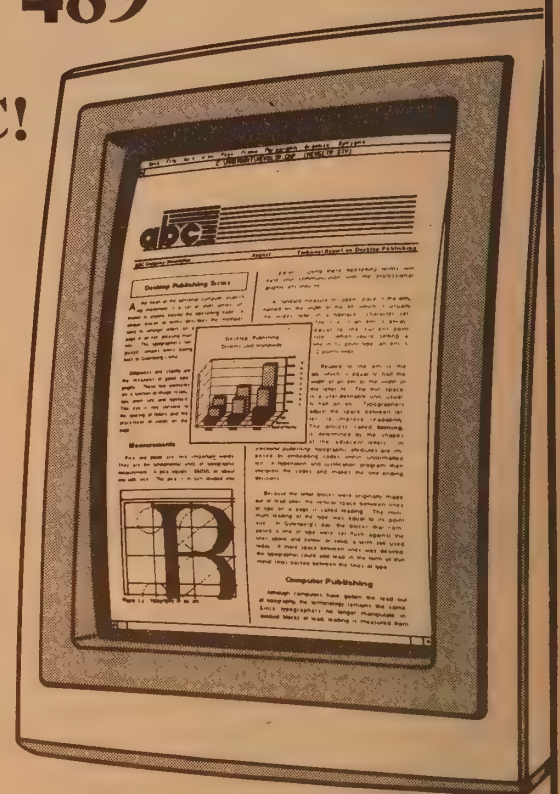
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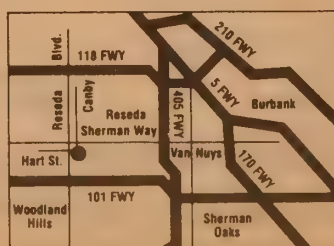


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Gold Hill Signs Japanese Agreement

CAMBRIDGE, MA (NB)—Gold Hill Computers has signed an agreement with Computer Engineering & Consulting, a leading Japanese software house, to support Gold Hill's line of artificial intelligence software for PCs in Japan. Gold Hill says the deal is worth \$12 million over five years. "There is a large potential market for AI development and delivery tools in Japan," said Celia World, Gold Hill's international marketing director.

New Dow Jones Stock Wire

NEW YORK (NB)—Dow Jones & Co. has launched a new computerized stock wire for active investors.

The Dow Jones Professional Investor Report sends an alert via VDT or printer whenever an unusual price or volume moves on the New York Stock Exchange, the American Stock Exchange, or the National Market System. Reporters will then give subscribers further information about the alerts.

Borland Unveils Turbo Pascal 4.0

WASHINGTON (NB)—Borland International President Phillipe Kahn personally unveiled Turbo Pascal 4.0 at the general meeting of the Capital PC User Group. The meeting came during the first annual Capital Microcomputer Users Forum, the first micros-only trade show in Washington.

The new Borland product breaks the 64K barrier

of prior Turbo Pascal offerings, allowing programs up to the memory limit of DOS. The new package is also a speed demon, compiling at 27,000 lines per minute on an 8 MHz AT. (And the old Turbo Pascal was no slouch, to begin with.) The new Pascal supports .OBJ files, separate compilation via units, and smart linking, which should allow programmers to make the switch to the new OS/2 operating system with little difficulty.

"Turbo Pascal 4.0 is a language that programmers can start with and stay with for complex applications development," Kahn said. 4.0 will retain the familiar \$99.95 price of current versions, and Borland will continue to offer version 3.0 at \$69.95. Registered users can upgrade to 4.0 for \$39.95 plus shipping and handling, until November 30. Also, Borland will make the entire Developer's Library available to registered users for \$150 until November 30. The regular retail price for the Developers Library would be \$650.

dBASE Enhancements Debut

WASHINGTON (NB)—Two new dBASE add-ons saw the light of day at the Capital Microcomputer Users Forum. Fox & Geller unveiled their new QuickEntry, an easy data entry front end for dBASE. And Database Applications Inc. showed its dNPL/Reporter, a report writer to replace the atrocious dBASE report generator. The new products came at a very successful show featuring a morning tutorial, devoted to dBASE applications, which jammed the Sheraton Washington lecture hall. On hand to demonstrate the tricks of the trade to the dBASE devotees were such mavens as Tom ("Come Home, Lassie") Rettig, Randy Wallin, Dave Browning, and Pete ("Dr. dBASE") Olympia.

QuickEntry allows a user to create and enter data into dBASE compatible databases. It has form-drawing features, does automatic documentation of the form, and offers a much wider selection of field types than dBASE, including types such as two-character state postal code abbreviations and lowercase to upper case conversion. It works with dBASE III and III Plus, Clipper, FoxBase +, Quicksilver, and DBXL. No price yet.

dNPL/Reporter allows reporting writing with "English-like" sentences. It allows opening as many as 36 files and dynamically joining 16 database files. It also has laser printer drivers. According to Database Applications, the product uses a fourth generation language to create a non-programmers language with single commands for performing complex operations upon multiple databases. The product sells for \$89.50. CONTACT: QuickEntry, Fox & Geller, 604 Market St., Elmwood Park, NJ 07407, 201-794-8883.

dNPL/Reporter, Database Applications Inc., 400 Wall Street, Princeton NJ, 08540, 609-924-2900.

Codec Patent

STAMFORD, CT(NB)—Just when you figured out what a modem is, along comes the codec.

The U.S. Patent Office has notified Concept Communications that it will issue a patent for the Image 30 video codec. The device is a PC board that transforms the computer into a full-motion, full-color teleconferencing workstation. Image 30 uses a combination of Boolean and statistical techniques to compress video signals. That means less computing power is necessary to send and receive the signals. As a result, the Image 30 sells for \$12,000, far less than any other video conferencing technology, according to Concept Communications. With a video camera and a high-resolution monitor, Image 30 enables a PC to send and receive full-motion, full-color video over telephone lines or satellite transmission networks. The product is compatible with both American

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PICA Ponders FCC Proposal

WASHINGTON (NB)—The Federal Communications Commission "has lawyer's disease," communications lawyer Stephen Bell told the Public Interest Computer Association. "They are trying to apply yesterday's solutions to today's problems. Applying voice concepts to computer concepts is not going to work." Bell, who represents Tymnet, was one of three panelists addressing the members of the Washington organization that offers computer consulting and services to the city's large non-profit community. The FCC proposal to impose access fees on use of data transmission networks could have a major impact on the non-profit organizations.

Apple Computer, one of the sponsors of the PICA meeting, issued a statement opposing the FCC proposal. Noting that Apple has donated computer systems to over a thousand non-profit groups over the years, Apple's Fred Silverman said, "We object to any action that would impede nonprofit organizations' ability to take advantage of telecommunications. Any additional costs required to use on-line services would constitute such a burden, especially in the face of cutbacks in government funding to many nonprofit groups."

National Systems Management Inc. estimates that adding \$4 per hour to telephone bills, which the FCC proposal would do, could have a devastating effect on use of SpecialNet, a communication network for teachers and educators. NSMI operates SpecialNet for the teachers, who access it via Telenet. NSMI says the charges would cause "a substantial drop off in SpecialNet subscribers, particularly in the field of special education" and

"a decrease in the ability of these individuals to access unique and useful information that has a direct bearing on the effect operation of educational programs." SpecialNet has over 3,500 subscribers.

New Chief At The Source

McLEAN, VA(NB)—The Source has a new chief executive officer, Michael Sears, put in place by the new management from Welsh, Carson, Anderson & Stowe, which bought the information network this year. Source president Jay Keller now reports to Sears. Welsh, Carson has also installed company head Andrew Paul as chairman of the board at The Source.

NEWSBYTES JAPAN

By Masayuki Miyazawa and Keizo Yamamoto

IBM And Fujitsu Settle Copyright Dispute

TOKYO (NB)—The American Arbitration Association, a private negotiating firm, announced an end to the four-year dispute between IBM and Fujitsu over alleged software copyright infringement by Fujitsu. The arbitrators say they did not find any improper conduct by Fujitsu. The arbitration permits Fujitsu to access IBM's programming information with a strictly controlled procedure and appropriate fees in the next five to ten years. Meanwhile, IBM receives an undisclosed sum of money from Fujitsu for the past use of its programming information based on their 1983 agreement. The final settlement will come when the AAA decides the figure of the payment later.

The dispute started when IBM had claimed

Fujitsu had violated its 1983 agreement on accessing IBM's software. According to the arbitrators, the original 1983 agreement had a serious flaw. "It did not clearly define what sort of IBM programming information was available to Fujitsu and what amount of compensation had to be paid to IBM," said Robert Mnookin, one of the arbitrators. "As a result, a huge gap has grown separating their understanding of the agreement."

Both firms have expressed satisfaction with the arbitration. It gives us the impression that a ray of sunshine has started to peek into the tense Japan-U.S. relations.

IBM/Matsushita TRON Deal

TOKYO (NB)—Industry sources say IBM Japan and Matsushita Electronics have agreed to jointly develop a 32-bit business-oriented personal computer based on the TRON architecture. The report has arrived just after IBM Japan had joined the TRON Association, which aims to make TRON a standard architecture for personal computers. With the agreement, Matsushita is expected to manufacture the TRON PC for IBM Japan. Moreover, both firms will cooperate to develop software for the TRON PC, the sources say. IBM Japan and Matsushita already have business ties—Matsushita has been manufacturing the Japanese personal computers the 5550 line and the PS/55 line for IBM Japan.

CONTACT: Matsushita Electronics, 1006 Oaza-Kadoma, Kadoma-shi, Osaka-fu 571, Japan

Cray/C. Itoh Agreement

TOKYO (NB)—The American supercomputer firm Cray Research has signed a business agreement with Century Research Center of the C. Itoh group.

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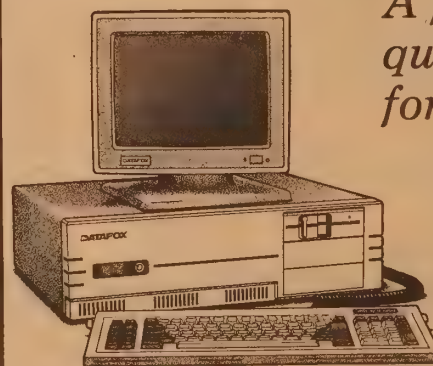
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With this agreement, CRC will help promote sales of Cray's supercomputers in Japan. CRC will also develop customized Japanese software for Cray's supercomputers. With this help, Cray is expected to boost Cray's sales in Japan in the future.

American AI Language For TRON

TOKYO (NB)—With the help of Production Systems Technologies (U.S.A.), the Tokyo-based software house Personal Media has started to rewrite the artificial intelligence programming language OPS83 for the 32-bit standard operating system TRON. OP55, an original version of OPS83, was developed by engineers at Carnegie Mellon University. Personal Media has currently been selling an MS-DOS version of OPS83 in Japan.

CONTACT: Personal Media, c/o Special Product Division, Gotanda-NN Bldg., 2-12-19 Nishi-Gotanda, Shinagawa-ku, Tokyo 141

Multitasking MS-DOS

TOKYO (NB)—A multitasking driver for Toshiba's laptop computer the J3100 (or T3100) has been developed by Sord OA Systems. With J-TASK, two programs will run simultaneously under MS-DOS 3.1. It costs 30,000 yen or \$210 and is intended to engineers. "Handling the program requires a technical knowledge," explains a Sord spokesman.

CONTACT: Sord OA Systems, No.2-Seiko Bldg., 4-2-11 Kudan-kita, Chiyoda-ku, Tokyo 102

Four-Megabyte 3.5" Disk

TOKYO (NB)—Toshiba has started to license its latest disk drive diskette technology to companies

in and outside Japan—a 4-megabyte 3.5-inch disk drive and diskette. Major companies have already started to develop their own products based on the technology, including Sony, Fuji Photo Film, Hitachi-Maxell, 3M, TEAC, and Matsushita.

CONTACT: Toshiba, 1-1-1 Shibaura, Minato-ku, Tokyo 105

TRON Symposium Slated

TOKYO (NB)—The TRON Association will hold its international symposium on the future 32-bit standard operating system TRON in Tokyo on November 13. Major Japanese makers are expected to introduce prototype TRON personal computers at the symposium. The Association accepts 600 participants. The fee is 30,000 yen or \$210 for non-members.

CONTACT: The TRON Association, Kikaishinko-kaikan, 3-5-8 Shibakoen, Minato-ku, Tokyo 105

MSX Standard Scrapped

TOKYO (NB)—The Tokyo branches of Microsoft and ASCII have thrown out the MSX standard and have begun to push another standard for personal computers. This time it's an IBM PC/AT-compatible standard with a Japanese language feature called AX. The two firms formally set up a preliminary committee for AX on September 10.

The AX computer uses the Basic I/O System of Phoenix Corp. (U.S.A.), an 80286 or 80386 chip, and Kanji software of Softbank Corp. (Tokyo). Surprisingly enough, Sanyo already announced its AX-based Japanese PC/AT compatible computer the MBC-17J on September 10. It costs US\$2,465. A total of 14 companies have expressed interest in this standard, but there are only three

major computer names involved—Sanyo, Sharp, and Mitsubishi. (Interestingly enough, Sharp did not attend the press conference.) The rest of the participants are mostly peripheral equipment makers and marketing firms. Apparently, many other computer makers do not want to take the risk again—once bitten twice shy.

Japanese OS/2 Due Early 1988

TOKYO (NB)—The Tokyo branch of Microsoft announced that it will start marketing a Japanese version of OS/2 in the first half of 1988. It will run on the IBM PS/55 family, the Japanese versions of the PS/2 line.

32-Bit NEC PC98

TOKYO (NB)—As was rumored last week, NEC released its 32-bit personal computer, the PC98XL DOUBLE, on September 8. The machine has an 80386 chip, two 5-inch 1MB FDDs, and a 40MB HDD. It supports MS-DOS 3.1, Japanese OS/2, and NEC's Unix PC-UX/V. PC-UX/V provides a multi-user feature, allowing four users to operate the machine simultaneously. The PC98XL DOUBLE is compatible with the PC-9801 family, which is a V30-based best-seller 16-bit personal computer in Japan. But its price, US\$6,958, is still expensive for personal users.

CONTACT: NEC, 1-4-28 Mita, Minato-ku, Tokyo 108

Fujitsu's 32-Bit PCs

TOKYO (NB)—Fujitsu announced an 80386-based 32-bit personal computer the FMR70HD this past week. Fujitsu is preparing to release Japanese OS/2 and Windows for the computer. The company

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has also announced a much talked-about laptop computer, the FMR30BX, which is an upright box shape. That's almost identical to the company's best-seller portable Japanese word processor, the OASYS30AF. The laptop has a 640 x 400-dot LCD, a 512K memory, and two 3.5-inch FDDs. It weighs 6.5kg, and costs US\$1,887.

CONTACT: Fujitsu, 1-6-1 Marunouchi, Chiyoda-ku, Tokyo 100

256K DRAM Deal For IBM

TOKYO (NB)—NMB Semiconductor, a subsidiary of Minebear Corp. in Nagano, Japan, has signed a business agreement with IBM (U.S.A.) to provide 256K dynamic RAMs. NMB's high-speed and low-energy consumption chip will be used for IBM's 32-bit PC. To start, NMB will supply 2.3 million sets of the chip to IBM by the end of the year. NMB has similar chip supply contracts with other major American firms, such as Compaq and Data General.

CONTACT: NMB Semiconductor, 1580 Yamamoto, Tateyama-shi, Chiba-ken 294, Japan

Toshiba Machine Admits Violation

TOKYO (NB)—Toshiba Machine's president Akira Iwahashi has admitted illegal sales of high tech tools to the Soviet Union. According to the indictment, Toshiba Machine shipped the first milling tool as early as in December 1982.

Meanwhile, U.S. Navy's Guide To The Soviet Navy reports low-noise Soviet submarines were already being built and stationed in 1981. So, apparently there's a time lag. In fact, there's no evidence that Toshiba Machine's milling tools have contributed to reduce the noise radically. Moreover, a report says the screw noise could be as minor as the automobile's tire noise, since submarines have much noisier parts like engines and pumps. "Without proof, the U.S. Congress is trying to go as far as to bash the parent company Toshiba Corp.," argues an analyst. Nevertheless, it is evident that Toshiba Machine has violated the COCOM agreement.

Meanwhile, the parent company Toshiba Corp. announced (9/9) an unprecedented strict COCOM-rule compliance program which applies to the whole Toshiba Group. It has a double-check system to check indirect transfer of goods to the Communist bloc via third parties, under which the violators of the program are fired.

In the wake of its subsidiary's COCOM-rule violation, Toshiba's export volume to the U.S. in fiscal 1987 is expected to drop by \$211 million.

DEC Sponsors COCOM Seminar

TOKYO (NB)—The Japan-U.S. political relationship seems to be tense, but company-to-company relations seem to be quite warm. Japan Digital Equipment Corp., a Tokyo subsidiary of an American firm, has decided to hold a seminar on how to comply with the COCOM rules. The seminar, which was requested by Japanese firms, covers how to make a corporate export compliance program, how to execute it, and how to check it. It will be held in Tokyo and Osaka on October 27 through 30. Digital Equipment Corp. has been quite successful in the field of export control. So, the seminar will help Japanese firms to stop a recurrence of COCOM-rule violations in the future.

CONTACT: Japan Digital Equipment Corp., Sunshine-60 35F, 3-1-1 Higashi-Ikebukuro, Toshima-ku, Tokyo 170

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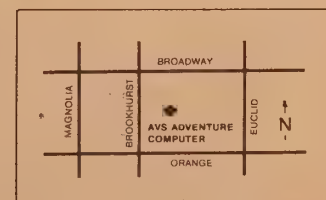
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Paradox & Philosophy With Philippe Kahn

In the personal computer community, where independence and eccentricity are practically *de rigueur*, Philippe Kahn has established himself as a larger-than-life character—a successful entrepreneur flying in the face of tradition, a thrower of legendary parties, a serious musician, an outspoken industry critic and practitioner of crudespeak.

His opinions are fortified by an impressive track record. A mathematics professor in his native France, he moved to California to seek his fortune in high-tech. Finding himself a Silicon Valley unemployable for lack of a green card, he founded Borland International in 1983 in hopes of selling a few copies of his Pascal implementation, *Turbo Pascal*, to programmers and hobbyists. He also evinced some distinctly iconoclastic attitudes for the time, notably the notion that copy protection was both an unconscionable inconvenience to the user and an unnecessary complication for vendors who sold their software at a fair price to begin with. Events proved the accuracy of his opinions—*Turbo Pascal* flew out the door, followed by other Turbo programming languages and other low-cost, high-quality tools like the perennial bestseller *SideKick*.

It's the morning of September 17. At Techmart in Santa Clara, Borland is hosting a press conference with Ansa Software, purveyors of the successful—and expensive—database manager *Paradox*. They're announcing an acquisition deal under which Ansa becomes a wholly-owned subsidiary of Borland. This venture, described by Kahn as the biggest such deal in the micro software industry's history, is a strategic alliance which will enable Borland to challenge the Big Three (Lotus, Microsoft, and Ashton-Tate) on their own turf, the mainstream business world.

Sitting on the right is the soberly gray-suited Ron Posner, late of Ashton-Tate, president and CEO of Ansa, now assuming the position of executive vp/sales at Borland. He's accompanied by Ansa co-founders Richard Schwartz and Robert Shostak, similarly buttoned-down and decorous. They embark upon a careful presentation of the strategy with which they hope to entrench *Paradox* in the corporations of America.

On the left side of the table, periodically interrupting them with editorial asides and ebullient explanations of technical fine points, is Kahn, resplendent in an eye-popping blue jacket and red tie.

When the last point's been made, the last transparency removed and the projector turned off, the ultra-serious Posner delivers a closing oration, sketching a glorious future in which Borland, rising from its humble origins, takes its true place in the real (i.e. corporate) world.

Kahn looks at Posner. He looks at the assembled journalists. His face lights up with an evil grin. "Of course," he announces, "it doesn't mean we're going to become a bunch of corporate a**holes." These are interesting times at Borland. There's

little doubt that the Ansa acquisition will effect significant change within the company.

Founded in 1984 by SRI veterans Richard Schwartz and Robert Shostak, Ansa challenged the database giants with *Paradox*, a relational database management system that combines power with unprecedented ease of use (see "The Joy Of *Paradox*," this issue). Its marketing efforts took the form of a sophisticated outside sales force aimed at the corporate marketplace. By acquiring Ansa, Borland plans to utilize this effective channel to introduce current and future applications to a world quite different from its original markets.

"On the one hand you have a universe that sells over half a million PCs and compatibles a month. On the other side—in August I think there were only 35,000 Macs sold. So no matter how you look at it, it's a matter of economy of scale, and also the potential size of the market."

At the press conference, Ansa founders Schwartz and Shostak announced sweeping (and potentially devastating to the competition) plans to broaden *Paradox*'s appeal by offering a version for 80386-based machines which actually utilizes the superior processing capabilities of the 386 chip—a product Borland expects to begin shipping almost immediately. Under development are versions to run under Microsoft *Windows*, OS/2's Presentation Manager, and UNIX.

The distinguishing feature of these versions is that, to the user, they will be indistinguishable—*Paradox* sites will lose no time to retraining, because the software's front end will appear exactly the same in each version. By the same token, a LAN could have UNIX, DOS, 386, *Windows* and OS/2 versions running at different nodes, all

working on the same files contained in a central server.

Additionally, pointing out that all the programmers who write dBASE, R:BASE or PAL are a very small group compared to those who write, say, Pascal or C, Shostak revealed that *Paradox* will also be accessible using Turbo Pascal, Turbo C, and Borland's other programming languages.

Waiting in the wings, meanwhile, with no firm ship date announced, is *Quattro*, a spreadsheet package that's been under development at Borland for three years. According to Kahn, it combines the functionality of two \$495 Lotus packages (1-2-3 and *Freelance*) and will sell for \$195. In addition, he points out numerous advantages—better graphics, automatic self-configuration to your hardware, “soft” user interfaces that let the user create a personalized look-and-feel, smart recalculations that improve performance by recalculating only those cells actually affected by changes, and blinding speed, because the entire program's written in assembly language.

Quattro's pricing and features are the result of considerable thought; says Kahn: “A little better is not good enough. Priced better, for a real tool, is not good enough. You have to have a combination of incredible advantages from a product standpoint, a performance standpoint, and a price standpoint. That's what *Quattro* has, that's what we're so excited about.”

There's little doubt that profound changes are ahead for Borland as it begins its foray into the corporate environment. Despite its growth, it's been essentially a one-man company, with Kahn indisputably in charge. Its new strategies call for more complex structures, different styles, new approaches.

We visited Kahn on the eve of the press conference, at his new house in the Santa Cruz mountains. Not unlike Borland itself, the setting seemed poised on the brink of an unknown but promising future—new vistas, open spaces, and projects under construction. Always outspoken, often controversial, Kahn discussed matters from the pragmatic to the philosophical, looking to the challenging months ahead.

The Ansa deal is Borland's first major acquisition—how did it come about?

We did it here at the house on the weekend of the Fourth of July. Something like that would've taken months, but I think we all decided that if we wanted to do it it would have to happen fast.

The way everything happened was very different. First thing we did was, I was looking at the product. I was very impressed. Once I realized it was a truly superior product I told one of the directors, who happened to have an office in the same building as Ansa—it's a pretty funny story, because he would always tell us, their stock is piling up, they're working late these days—that's been going on for a year. That's the way to buy a company, you know, rent an office in the same building they have, observe them... [laughs].

So anyway, we went to see them, and I think the idea intrigued these guys. The first thing we did was meet with Rob Shostak and Richard Schwartz, who are the two vice presidents of engineering at Ansa, and the guys who started the product. I made sure that there was a match, and that people felt good about it.

So when we were sure that the R&D base, the product base was okay, that everybody was happy, that we'd have new versions of the product and things like that, then we said okay, let's see if we can put something together that makes sense for everybody.

What were the parts that fit?

The first part—the product was great. The second part—there was a lot of complementarity

in the organizations. Ansa was very strong from a direct corporate sales force standpoint. The outside sales force of Ansa is probably the most polished in the industry. And we didn't have an outside sales force—our sales force was essentially working from inside the company and calling out—tele-marketing and the retailers. We didn't have six regional offices with five people in each like they have.

Immediately we said, wow, we know we're coming out with new products, *Quattro* and so on, we know those products are really going to compete head-to-head with products such as *Lotus 1-2-3*—which have those outside sales forces. That's a tremendous opportunity beyond the *Paradox* opportunity. So that was a good match.

And there were some very good people, like Ron Posner and so on, and we got along real well. It was surprising to see that, although there could have been a culture clash, it wasn't the case. It was not a problem.

It just started to make sense, and as everything made sense we made a deal very fast.

Is *Paradox* going to stay the way it is, or are you going to be tinkering with it?

We already have a lot of synergy between our R&D groups. I think where *Paradox* will be tomorrow wouldn't have been so without this merger. In a reciprocal manner, people like Richard Schwartz and Rob Shostak contribute and will contribute to a lot of products beyond *Paradox*. Do you have plans to move these products for the IBM corporate environment into the Macintosh environment?

We're working on Macintosh software, but right now it's a little independent. I think you have to look at our Macintosh effort as an independent business unit. Of course there's some synergy between the Macintosh and PC products, but it's not really related to *Paradox* or anything else. You have to look at Macintosh as a different world.

It's been said that companies like Microsoft derive half their revenue from Macintosh applications. Is that your company's experience?

I don't think 50% of Microsoft's revenue comes from Macintosh software. I don't know the exact number, but I think they have about 10% of their revenue coming from their total Macintosh effort—I think their Macintosh products were about \$40 million last year.

Essentially our revenues coming from Macintosh software are about 10% of our revenue. Maybe it's a little less than Microsoft, but then they started before us.

Do you see Macintosh as a significant growth area?

We see Macintosh for itself as a significant growth area, because we're there, and one of the few that are there. I've seen recently a trend for people to say that they have a hard time making money on the Macintosh.

The problem is that on the one hand you have a universe that sells over half a million PCs and compatibles a month. On the other side—in August I think there were only 35,000 Macs sold. So no matter how you look at it, it's a matter of economy of scale, and also the potential size of the market. I think the few people who will be there will make money. But you can't blame people—you can buy a PC compatible for much less money than you can buy a Macintosh.

Do you see PS/2 and OS/2 changing things?

Well, I think you have to separate the two, and demystify things a little bit. PS/2—people say it's the first of a new generation; I say it's the last of the old generation. Okay, there's a different bus,

but it's a very well-engineered PC compatible. It's the best-engineered IBM PC compatible machine, cloned by IBM. IBM was the first clone-maker to really improve the PC. But if you run benchmarks, the PS/2 Model 80 against the Compaq 386, it's a big issue. You talk raw power, and forget about all the hype...

This industry has been real good, and maybe Apple started it, in creating hype marketing—I always say the closest thing to reality in HyperCard is that part of the name HyperCard is Hype. It's a good product, but is it worth all this hype?

PS/2 I think is the same thing. It's a nice piece of hardware, it's very useful, the new graphics adapter is much nicer, but it doesn't have much revolutionary. I wish the PS/2 would've had a graphics processor on board. Then maybe we

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could've done something significant with it. But it doesn't. It's an okay machine—its keyboard's like an aircraft carrier, it's a good machine.

That's a very different issue from OS/2. I really think OS/2 is the new operating system that is very close to UNIX in concept, performance and all that. It's clearly potentially a corporate solution. It is not clearly potentially a personal computer solution. It's a large operating system that provides facilities found in minicomputer-type operating systems, and if anyone had wanted that kind of operating system until now they would've switched to UNIX.

Will it have a better interface than UNIX?

The first version, obviously not, because it's a character-based operating system. The second version, with the Presentation Manager, will be pretty close to what you can find on UNIX machines such as Suns and Apollos, with graphics window management programs.

It's an interesting operating system, and it's something that Borland is supporting. We are in the business of building better tools for our customers. We'll be on OS/2 before anybody else. I was asked just yesterday, well, when will you release your compilers under OS/2, when will you release *Paradox* under OS/2—and I said hey, ask first, when will OS/2 ship? And we'll probably be there that day. Our bottleneck right now is, when will they ship? It's a very complex piece of software that will require a lot of testing, and

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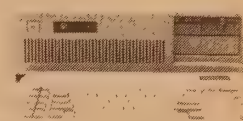
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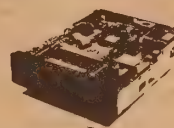
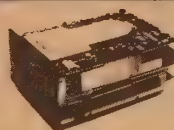
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there's not a lot to test with right now because there's not many applications. We have an ongoing development effort going on with Microsoft, IBM.

It's also going to be much more costly to an end user, because OS/2 is going to cost \$325, versus \$60 today. So it's a different universe you're opening up here.

Is MS-DOS going to hang in there for years as an important tool for the non-corporate user?

I think MS-DOS will hang in there, for corporations as well as for anybody else, for a long time. There are a lot of applications, its performance is okay. It's not the friendliest thing in the world, but people learn how to use it. If you learn DOS, you need about six commands. If you give it to kids, seven or eight years old, they're just using it, they don't care. I mean, it's six commands, dammit. It's like learning six chords on the guitar—if you can't learn six chords, you're never really going to play, so you better learn those six chords.

The whole issue is that there's lots of software, proven software, high performance software; there's a bigger choice of software, the prices are reasonable, you can get your work done. Because ultimately a PC is something that helps people get their work done. It's not some fashion item that you have to change every year because the colors are not in. Some people need the status symbol, but I don't think most of the people need that status symbol.

There are three gigantic software companies trying to dominate the market. You came out of nowhere with a strategy of not having hits, of having products that would continue to sell well for a long time. Keeping a low profile. Now that your company's so big, do you see the Big Three as a roadblock to what you're trying to do—and is your company still manageable?

I think we're manageable... [laughs]

We're growing a lot. I think this year if you consider that there's four biggest software companies, I think we're in. We're into five, and I don't know whether WordPerfect is bigger than us this year or not. Between what Borland and Ansa are going to do, people are talking between 60 and 80 million dollars.

We're not as big, by far, as Lotus or Ashton-Tate or Microsoft. We're much smaller. There's something that's clear when you're smaller—you've got to be better, because otherwise nobody's going to buy your stuff, they're going to buy the bigger guy's stuff. That's what we've tried to do and what we're still trying to do—build better software. We've grown through the quality of the software, not necessarily through the corporate image projected in the *Wall Street Journal*.

The point is that we have proven that it's possible to release new products, and to have a whole stable of products that do well, sell well, and things like that, which a lot of people hadn't done. We have a language business, we have applications, there's Quattro coming out, there's a lot coming out. We started the work on Quattro close to three years ago, that's in the real infancy of the company, when SideKick got out. It took some real insight at that point to decide to fund the development of the next generation spreadsheet—which we did.

How will we fare compared to the biggest companies? I think that's not an issue. We're not trying to take market share from those biggest companies. We're not trying to say, we're the biggest, we're the strongest. We're just trying to produce products that the customers need. We believe that if we do so, develop better solutions, there's always going to be a market for our products.

Rather than try to take so much percent market share from Lotus, whatever—we can compete head to head with the biggest. We compete head to head with Microsoft—the language business

has been pretty crazy, advertising wars going on and all that—which is fine. It gets everybody excited. I don't think it means that the pie of the market is this size and we split it more or less equally—I think it means we extend the pie, because you know, there's always this thing that if there's only one person in the market, there's not much excitement. But if there's two people competing, and talking about it, and getting excited and all that, then the market suddenly expands, and people say, oh, that looks interesting, there's wars, you know. That's very important.

How significant is the university market for your language business?

Very significant. Obviously universities and schools are prime buyers of languages.

That being so, do you have any plans to get into the UNIX market?

The UNIX market in universities is only a part of the market. The market is the people who have a VAX or an HP 3000 or something like that, with several terminals on it. But it seems that the trend now is for universities to advise their students to have personal computers, whether they're PCs or Macs.

So we're going to a certain extent into the UNIX market, but it's not our major focus right now.

How do you spend your time during the course of the day? Marketing plans, working with the engineering department, outside of the company altogether?

Usually I wake up and I go for a run. I'm back by 7:30 or so, and the first thing I do is go on MCI Mail, on our electronic mail system. The whole company's on electronic mail. I get over a hundred messages a day that I read and answer—mostly from our internal mail system, some outside. That's really important, the communications of the company, because that allows us to communicate with Europe, with Japan, with everything, because we're present everywhere. We have all this information flowing, and we have everybody online. That's really important in the way the company works.

Then once that's done, I'm on a computer so I usually play with software or something. I spend quite a bit of time with the people in development. I think the most time that I spend is on products and marketing. There's different meetings, different potentials, different things. Designing new strategies, designing new products. Usually I have lunch with people in the company. and...

Oh yes, I did take a shower. Otherwise we'd have people quit...

It's very much marketing, R&D. We're starting a magazine, also. TurboTechniques, the language magazine. I got pretty involved with that—it's something I'd never done. It's controlled circulation, registered language users. It's a how-to kind of thing; it only deals with how to get things done with Borland languages. There's three articles in each issue on Turbo Pascal, Turbo C, TurboProlog, TurboBASIC, PAL, the Paradox Application Language, and so on—beginning, intermediate and advanced, so people can find what they want. There's cross-references between languages, and there's general purposes and so on. The idea is to provide a lot of information and to support our users. But it was an interesting project, to build a magazine, because it was a real different universe. We even got Microsoft advertising in it, which is kind of funny.

I've learned that as the company grows I cannot get involved in everything. It's a very difficult process, to just let go. To just say, hey, I have some smart people here, let them make these decisions. Because if I want to get involved in this and always argue with them, then we're just going to have a bunch of mushrooms. It's real difficult.

It turns out that every time I leave the sales increase. [laughs] I mean, if I leave for Europe the ads get better, the bugs get fixed in products—it seems the more I stay away the better off the company is.

Even before the Ansa deal, you were addressing radically different areas at the same time—Macintosh users, programmers... Did you find that this caused a certain lack of focus that might be aggravated by adding Ansa as a new element, or does it all get integrated in one cosmic plan?

There's a cosmic plan. The cosmic plan is to have a language business. Languages are where our company started, and that's really important. The language business you can see on the PC and also on the Macintosh.

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Are languages forever? When you come up with a good language, do you pretty much have that franchise?

You don't have a franchise. As long as you produce the best implementation of that language on the market, you'll sell. But you have to keep updating, getting better, all that stuff—no question about it.

That's one of the difficult things about this business, and why you see a lot of people bailing out. Very few people have the persistence to stay in this business. Mitch [Kapor, of Lotus] left, a lot of people—it's a real tough business on you. It's not much unlike the music business, where you can be a hit for a year, two years, three years, four years, but how are you going to keep up with it as a person? The company might, but it's a real tough business, because you always have to improve and make sure it's there and so on.

Do you think your personality's on the line, or you yourself are on the line, as an owner-operator?

Yeah. Sure.

So you think there's more pressure on an owner-operator than on some guy who works his way up to CEO and runs it for a few years?

Sure. There was much more pressure, say, on Mitch Kapor than there is on Jim Manzi. No one knows who Jim Manzi is, and no one really should—he's an MBA, a professional manager managing an existing company. Mitch was something else—

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there was personal pride and personal investment in Mitch building the product, participating and all of that, and for him it was a tremendous pressure. All these lawsuits that Lotus started, he disapproved of. Because it was personal. As he said, it might've been a good MBA decision, but it was a very bad personal decision, and he didn't want to be associated with it. There's a lot of personal involvement.

Very few people are still like that in this business. [Microsoft's Bill] Gates is probably still like that. But it's true, you take things personally, and it's a big difference. See, if an Ashton-Tate product gets a bad review or something like that, nobody cares at Ashton-Tate. Everybody's gone. If a Borland product gets this, I feel personally like I have to do something about it. You're involved with it.

One of the things about the products we've acquired, such as *Paradox*, is that the R&D teams are there, and it becomes part of the family. It's not just we bought a product and we're going to market it. The whole team is in. The same thing with *Reflex*—the whole team is in.

How do you grow? You can't expect the original guys in the company to write all the software that the company will sell when it's a hundred times bigger than it was. So how do you add people? You can hire them, you can acquire smaller companies and bring talent in—as long as you keep the talent in. All this is part of the process, and it's very personal. I think Apple was very personal until Jobs left.

In any early growing industry there are people who are exciting, and they're the ones who do things. Years later it's all managers—and nobody could care less who runs the insurance industry. Is there a camaraderie among you pioneers, or are you all competitors looking at each other out of the corner of your eye? Is there some club the Big Guys go to, or is it all competition?

It's a combination of both. There are certain areas where it's very competitive.

I personally don't care. I can sit down with everybody, any competitor. But the other way around is not always the case. People have to realize that we're competing very heavily and there's lots of personalities involved. There's a lot of egos. But in other respects, we all know that we can still sit down and talk.

The problem is, a lot of people come from different universes and have different personalities in this. If you take musicians, they compete to get to the top of the chart, but eventually people can get together and play. In this thing, you don't get together and play—what are you going to do, get together and play on computers or something?

You can't really jam.

Yeah, you can't jam, and the interests in life, for a lot of the people involved, are real different. So it's not necessarily a big club that people go to. It's a little different.

But there's not that many personalities left, I think.

Is fame something that motivates you?

I've found that you never really know until you get there, and the rest is theory.

The big questions are money, or power, or fame. I've found out that it's always tempting in the beginning. It's not unpleasant to be on the cover of a magazine or something like that—or that's what you think. But after a while, I really get tired of it. You really say, hey, I just hate that. Because you can't go anywhere, people start knowing you—there's always someone on a plane that knows who you are and sits down and talks to you about something. When you go to a restaurant in New York, there's always someone who knows you

in the room—it's a pain in the neck. In the end it's a pain in the neck because you can't be quiet, you can't sneak in, do your little thing and sneak out.

Do you get a better table at that restaurant in New York?

Yeah, eventually, but it also could impact on your personal life. For all that you get, you lose some freedom. It's great when nobody knows you—you can do a lot of things. When people know you it's more difficult.

Money—you know, there's only so much money you can get and do things with, and then what are you going to do? Are you going to collect it?

The problem is—first, I'm so involved in what I do that I don't have time to spend it. And even then, in the time you have to spend it, there's only so much you can spend unless you want to throw it down the drain. You get a car, you get a house, you get a boat, you get a plane eventually, and so what do you get next? So then suddenly you realize that the old values, which is quality of life, are what counts. But you go through all this process and buy toys and stuff.

As a matter of fact I had another house, and I filled it up with toys, and suddenly I moved out. Chased away by the toys. [laughs] And if you look in this house it's very empty. I just got tired of having stuff on the walls, of having objects everywhere. You get tired and you want space. That's really the issue.

So you change, and what becomes important is scary, actually. Because you come to a point where you say, why am I really doing this? What's my motivation, and do I really want to do this, and is this the most important thing I can do? And you reach some conclusions that are really different from what a lot of the people around you are doing. Because you see a lot of people are going after money, after power, after fame and all that, and you're really not interested anymore in those things, you just feel, to hell with it. You'd rather do something else.

So why ARE you doing it?

I think because basically it's interesting, there's some challenges there. And also we've created something, there's 400 people there and they're all counting on building something. There's really a loyalty back to the company, and there's also the customers out there who are expecting something, a commitment we made to our customer base that we think we need to fulfill. It's a combination of things.

Do you ever feel like you might do something completely different? Maybe produce a movie?

That's always a possibility. But I wouldn't do it by letting everybody down. But it's always possible that you might get involved in something radically different.

In the same way, since when I got involved in this [Borland] it was radically different from what I was doing before, you can really suddenly say, Okay now, next!

But there's also ways to do other things and still be doing this. The magazine experience was a great experience. We've done something real exciting.

On a business level, do you have any regrets?

Sure. We've made some errors. The biggest error we made was in the Macintosh market. We priced a lot of software wrong. It turns out the Macintosh market for a database like *Reflex* is not price sensitive. By putting *Reflex* on the market for \$99 we downgraded the image of the product and gave it the reputation of a low-end database, which it isn't.

Some of the reasons we made some marketing errors with the Macintosh—it was a totally foreign thing for me, and I had no idea what marketing on the Macintosh was. Now I know much better.

But on the PC side, you do marketing without any alliance to anyone. You just try to reach, in a normal consumer marketing way, the end user, bring a message to the end user, through advertising, direct mail, whatever.

The Mac market, you can't do that. In the Mac market, you can only really succeed if you have a strong alliance with Apple. Which we never had, we might be starting to have, or maybe we'll never have. That was a major strategic mistake in approaching the Mac market. We did well, but we could have done ten times better. But that's something I didn't know.

What do you attribute the lack of a strong relationship with Apple to?

I never had the time to cultivate it. You see, we got busy growing on this side of the hill and avoiding going to the other side of the hill, and building products and stuff like that. And what it takes is going over there, spending a day, and talking and courting people and all that, and it's never been something we've been good at.

We're setting up an independent Mac division right now that'll do business in a Mac way. But I personally don't have the time to do that—I talk to John Sculley once every two weeks or so, we have a conversation, but John is not going to do the thing...

You need to hang out with the evangelists...

I hate that name [laughs].

Why, because they're evangelizing products that aren't yours?

No, it's just that I hate the association of any religious connotations with computers.

Why?

Well, maybe it's because I'm a Jew. [laughs] I don't think there's anything religious about computers. It's just a tool, and I hate this idea of fanaticism. I think computers are just tools to be used by people, and I don't see why anybody should be fanatic one side or another and try to convince people.

Matter of fact, I think the concept of people trying to convince other people, like evangelism, is one that I don't like at all.

I don't like the word, but eventually they did a good job.

But anyway, it's a different culture.

Do you ever see getting into the hardware side?

For now I think the company's staying away from hardware projects. Our hands are pretty full with software. Software takes time. The real bottleneck of the industry is software, not hardware. It's much easier—if somebody gives you a new processor, it'll probably take you six months to design a new computer and have it working. But to build an operating system will take you a year or two, and to build software will take you many years. So what you usually have is that the software is years behind hardware. Like, there hasn't been any real 286 software ever. Some people are starting to release 386 software, but it's always late. By the time there's 386 software all the 486 machines, or whatever it is, will be out. There's hardly a real 68020 or 68030 software in the Motorola machines like the Macintosh or the Sun, and the 68030's going out.

The bottleneck comes from the fact that no matter how many resources you put behind software, it's ultimately a small group of people, usually less than five, that'll build the product. No matter how much money you have, you cannot put 100 groups of five to speed things up, it's just not going to work. It's just a simple man-limitation and talent limitation.

So for that reason, being in software is a great place to be, because if you know what you're doing, you always have the potential to grow.□

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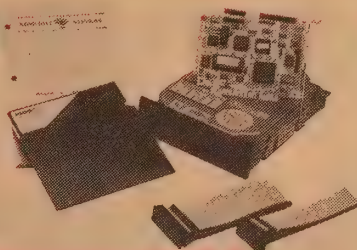
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The Joys Of Paradox

By Birrell Walsh



In the several months I've been using *Paradox*, I've found that the best word to describe it is "facility." It means both ease and ability, and that's the combination in this remarkable product.

When you run *Paradox*, you find yourself facing a menu much like that of *Lotus 1-2-3*. The menu gives you access to the whole of *Paradox*'s abilities. You can take in data, view tables (as *Paradox* calls its databases), make reports, print, design forms, and "query" the tables without ever leaving the menu system.

Because each menu choice can be called (as in 1-2-3) by typing only the first initial of the word, you can traverse the menu system with a few keystrokes. Each stroke takes you down another layer in the menu tree. You soon remember that you rename tables with "TRT," and forget that it stands for {Tools}{Rename}{Table}.

Paradox owes much of its ease of use to its menu system. The lynchpin of its power is query-by-example. Query-by-example allows you to ask questions of a database (or several databases at once) by checking off fields on an on-screen form. You can link fields in different databases with "examples" — place-holders that mean "make this field in this database be the same as this other field in the second database."

We designed a *Paradox* applica-

Because the program allows you to do things very quickly, it makes it possible to try out your ideas. If they don't work, you can change them a bit and try them again — right now.

tion tracking donations to a local non-profit agency. The query allowed the agency's workers to retrieve donations and donor names from two different databases, and to summarize each person's giving history. The total number of keystrokes from an empty screen to the answer? Twenty-nine, including moving around on the screen to check the fields they wanted included. That's fewer keystrokes than are in this sentence.

Query-by-example permits complex searches of the database without programming. You simply put your conditions into the blank table-form that *Paradox* provides when you do a query. Want all the donations in 1986? Put ".../1986" into the date field in the gift table. To add a second condition (say, donations of more than \$100), put ">100.00" in the

Amount field. More complicated "and," "or," and wild-card conditions are also possible.

Paradox demonstrators emphasize the fact that the "answer" table *Paradox* gives you in response to a query is a real database in its own right. This means that you can use it as a base for further queries, rename it and keep it, and write reports based on it.

Query-by-example lets people start using *Paradox* for practical purposes right away. It is every bit as easy to get information out of a *Paradox* table as it is to put it in. You no longer have to call a programmer to examine data from several tables. *Paradox*'s publisher, the Ansa Corporation, likes to send liberal-arts graduates to shows to demonstrate the product. They often begin with the statement, "You know, I don't

usually like computers — but this is so easy..." Then they do some query-by-example work on multiple tables, and the buyers line up.

This is not to abuse liberal-arts majors — I majored in Brazilian History myself. What it means is that people can start doing useful work on a database without the long apprenticeship that other databases demand. It also means that people can bypass the programming priesthood. Micros made computing hardware available to people without computer-science degrees. *Paradox* makes database software available to them in the same way. The excellent documentation is a delight and a more-than-adequate tutorial.

But if *Paradox* is this easy to use, is it powerful enough to be used for serious applications? Well, *Software Digest* has given it the highest rating for databases for two years in a row. There can be up to two billion records per table, each up to 4000 characters long. There is no limit to the number of simultaneously open databases. *Infoworld* tests (August 17, 1987) reported that all of *Paradox*'s power and convenience did not make it slower than other database products.

What impressed me was not the specs, but the rapid evolution that a user can go through. You start as a raw beginner, hesitantly designing

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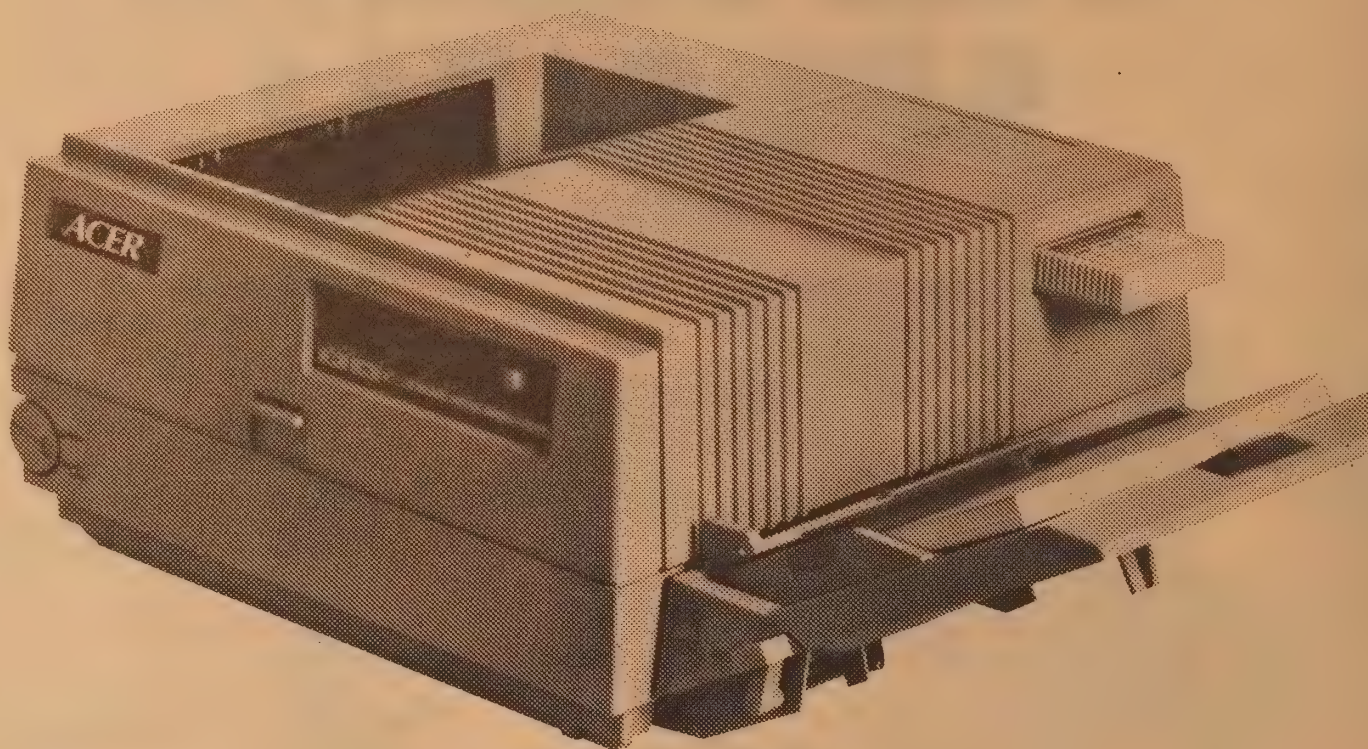
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J [F6] to include a field in the ANSWER: [F5] to give an Example

EMPLOYED	Last Name	Position	Date of Hire	Soc Sec
			7/13/78	

ANSWER	Last Name	Date of Hire	Soc Sec
1	Anderson	4/01/82	431-87-3451
2	Chambers	7/14/78	790-72-8524
3	Christiansen	1/25/83	232-80-9671
4	Cardner	3/06/81	439-22-7871
5	Clotzbach	6/02/80	459-23-7831
6	Corman	6/20/85	430-86-4561
7	Jones	3/05/80	399-13-4275
8	Kling	3/31/85	765-21-8569
9	Lee	12/01/82	999-68-1247
10	Mandel	3/06/83	312-90-3872
11	Morris	4/09/81	103-77-2648
12	Morrison	4/09/82	329-67-1938
13	Pollack	4/09/81	712-99-6521
14	Sampson	5/02/81	983-21-7823

Paradox lets users query and perform mathematical calculations on data by checking fields and selecting rows on a query form. The information appears in the answer table. Here, the user is looking for all employees hired after July 13, 1978.

your first database. A half hour later you are retrieving data with query-by-example. In another hour, you can show someone else the basics. This is a very practical, usable kind of power.

Keeping What Works

Paradox claims that it allows you to do most of your database work without programming. To a large degree that is true. The menu that you see when you start Paradox branches and rebranches to most of the functions that you might want to use. But you will find that you want to make some kind of record of often-used sequences of commands. Paradox offers what it calls "scripts," an odd and finally appealing combination of keystroke macros and programming language.

When you go to "scripts" on the main menu, you find the choice "BeginRecord." If you choose it, the screen will clear and you are looking at the main menu again. Every keystroke and choice you make will be recorded until you again choose "Scripts" and take "EndRecord." The script you have made will have a name, and by playing that script, you can make that entire sequence of keystrokes run again. These macros can be edited with Paradox's script editor. You can record queries-by-example as well as macros. The query which you have fine-tuned can be re-used by playing it as a script.

Finally, you can write programs in Paradox. The Paradox Applications Language (PAL), which is provided with the database program, is a full-featured database language. It is easier to use than other languages I have used to manipulate data.

The odd — and, in the end, pleasant — feature of scripts is that you can combine all three kinds of scripts

into one. Because you can read one script into another, you can build scripts in modules and incorporate them into one master-script. The various scripts might be macros, saved queries, sections written in PAL, or any combination of these.

The Unobtrusive Servant

When you ask to view a table or use a script, Paradox asks what table or script you want. If you just hit return, Paradox shows you a list of the available tables or scripts. If you are viewing a table and want to edit it, the "edit" mode is only one key away. If you are viewing it as a table (in which records are rows, and fields are columns) and you want to see it on a "form" — again the command is one keystroke. These small touches are signs that Paradox was designed by users, for users. "God is in the details," as my parochial school-teacher said.

Paradox was designed to use artificial intelligence. It uses it unobtrusively, to optimize the speed of your operations. It investigates the amount of available memory you have, and it uses it all. Paradox makes temporary files to do tasks and then erases them when it is done.

Index files are one example. An index file is like a card file for books. The books may be stored in any order — say, the order in which they were bought. The index file might keep the names of those books in alphabetical order by author. You can look up "Hemingway," and the card-file tells you where on the shelf to find it. An index file does the same thing for the records in your database. If the index is for records in the alphabetical order of last names, for instance, it might record that record #498 is the first in alphabetical order (Mr. Aaronsen, perhaps). Next is #725

(Mr. Abushenep), and so on. Paradox makes index files whenever it calculates that making them would speed up the job you have given it. It makes them and keeps them in memory if there is room, or puts them on your hard disk. When the job is done, it erases them. If you have not used another database program, you might never know what Paradox is doing quietly in the background.

The Paradox report system is odd-looking but extremely effective. If you want your report to be "tabular" — a set of rows of data broken into subsections and summarized — Paradox can very quickly produce a tabular report that will group data on different fields. You can summarize and calculate subtotals and various other summary aspects (like "region" from the ZIP code).

Paradox also supports freeform reports. These allow you to do mail-merge from within Paradox, without the use of an external word processor. In the report section of the menu tree, options go all the way down to suppressing leading and trailing blanks, and whole blank lines. It is another case of Ansa's general philosophy — a database without programming.

Big Bells And Loud Whistles

In 1987, Paradox introduced its new network system, which allows an unlimited number of users to edit and use the same database. Locked records keep users from fouling each other's work, but do not prevent editing both earlier and later records. Paradox even tells you who is using the record.

Because each user gets all the features of the single-user version of Paradox, the result is more than the usual center-periphery system. Any-

body in the system can be doing the kind of high-level database research that has customarily been done in batch jobs at night. You have a database with truly distributed power. If you wish, you can limit access to tables and scripts with six levels of permission, from full rights to no access. Then Paradox functions like a center-periphery system. And the network administrator can modify the system as he or she sees fit, at any time.

Paradox comes with the (free) Paradox Personal Programmer — an applications generator, menu-driven like Paradox itself. With the Personal Programmer, you can design complete applications from the top down, without programming, by using the menus to create menus for your application and actions for those menu-choices to call. Those applications can be very restricted (say, data entry only) or they can include full-scale Paradox abilities for the user.

I don't understand how Ansa can afford to do it, but they are willing for you to distribute up to 250 copies of your application to others who do not own Paradox. They will provide you with a copy of Paradox Runtime in return for a completed license agreement and the princely sum of Nine Dollars and Ninety-Five Cents. You can quite legally have 250 people running your developed application for about three dollars per head, including your cost in purchasing Paradox in the first place.

Is this program perfect? No. It's expensive. The menu structure is sometimes obscure. Query-by-example is, usually fast and easy to understand, but some questions are difficult to put in the query-by-example format. Paradox is not very visually attractive. There are no graphics whatsoever. It's not exactly ugly, but you would find a better-looking product on the Macintosh and (likely) in upcoming products for Microsoft Windows. The rumor is that Borland, the new owner of Ansa, is planning just such a Windows version of Paradox.

But Paradox is already very, very good. Its quick turn-around time for data is exactly the quick turn-around time that word processors gave to text. Because the program allows you to do things very quickly, it makes it possible to try out your ideas. If they don't work, you can change them a bit and try them again — right now. Paradox takes serious database operation out of the hands of the programming priesthood, and puts it into the hands of everyone. That means that training costs are lower. Paradox is quite a product, worth every penny if you have serious work to do. (Ansa Corporation, 1301 Shoreway Road, Belmont CA 94002, 415/595-4469.) □

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DataFrame XP40 + 40

Tape Backup The Macintosh Way

By Mary Eisenhart

As anyone who's ever had to back up a 40 meg hard disk to floppies can attest, backups are a major, if necessary, nuisance. Tape backup units and their attendant software provide a significant improvement in speed, but until recently they've been unfriendly and inflexible by the standards Mac users have come to expect; if you'd only changed one file, you essentially had to re-backup the whole disk, or, at best, a single partition thereof, and as for your ability to actually see what was on the tape, forget it.

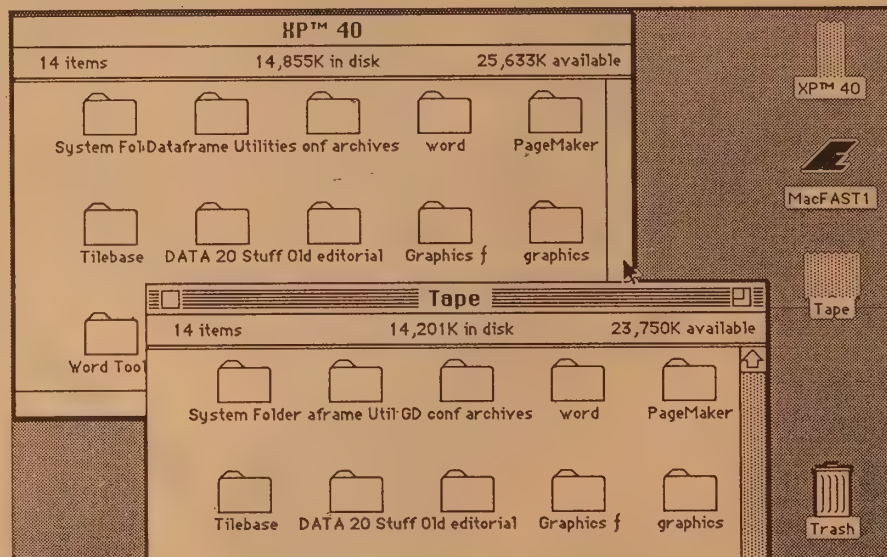
Which is why the XP 40 + 40 from SuperMac is such a godsend. It's a single-unit 40 megabyte SCSI hard disk and tape backup, and while it has many sterling features, its most spectacular accomplishment is its allowing the tape to be accessed and used exactly as if it were simply another disk drive. Changed one file? No problem — boot the tape and move the new file's icon onto it, placing the file in its appropriate folder. Or you can copy the whole folder. (You can also open files or even boot applications from the tape if necessary, but it's appreciably slower than doing the same thing from disk.)

The simple ability to copy, delete or change single files or folders allows a huge reduction in the time required to perform vital backup functions (and, human nature being what it is, greatly improves the likelihood that frequent backups will actually be performed). It also provides a powerful and flexible tool for dealing with issues of data security (say, your company's personnel records, which you'd have a hard time carrying around on floppies but don't want to leave, readable by all and sundry, on your hard disk, either) and organization (for instance, keeping your old business records archived on one tape and personal records on another, and not cluttering up your hard disk with either of them). Similarly, because the XP 40 + 40 is a SCSI device, it's possible to daisy-chain a number of drives and transfer their contents to different tapes, combine files from different drives, etc.

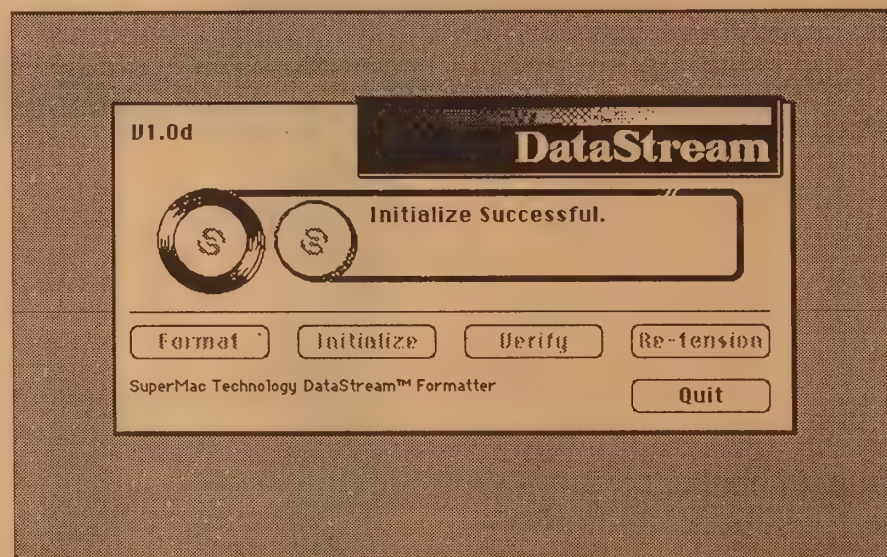
Operation

The XP 40 + 40 arrives ready to use, with useful SuperMac software already installed, from print spoolers to disk and tape utilities (should some mishap occur, the programs and relevant documentation are also included on floppy disks, but you may never need either). Simply attach the SCSI cable to the Mac's SCSI port, plug the drive in, turn it and the Mac on, and there you are. Moving applications to the hard disk from floppies or another hard disk is a simple matter of moving icons.

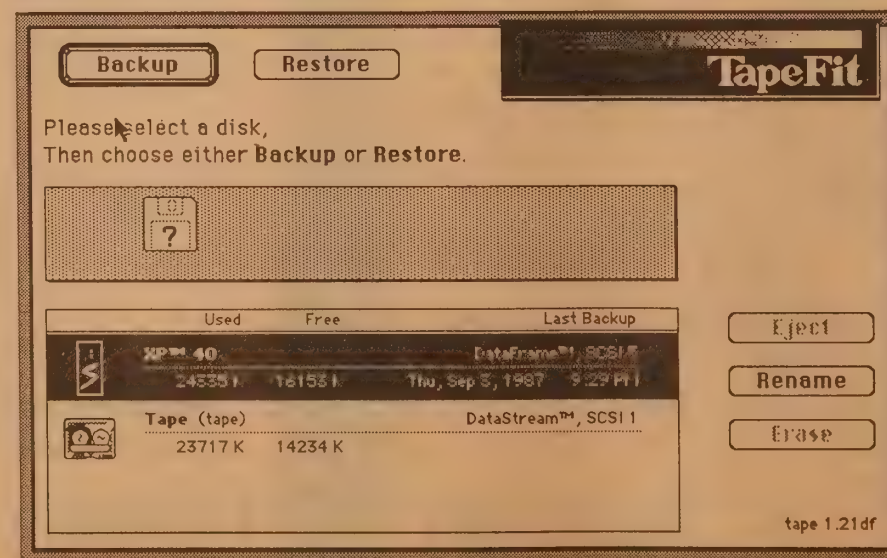
Instead of standard cassette tape, the XP 40 + 40 uses high density mini data cartridges — solidly-built, metal-backed 2" x 3" cartridges which have been in use on larger systems for some time now. One of the tradeoffs with this unit is that these tapes are currently appallingly expensive —



The XP 40 + 40 provides easy backup to tape, and allows files to be copied from other SCSI devices daisy-chained together. Note that the XP 40's files have been compressed slightly to compensate for the tape's smaller capacity.



New tapes must be first formatted, which takes about 45 minutes, and then initialized. The DataStream software makes this easy and intuitive.



When you begin your backup procedure, you'll be asked to select the disk to be backed up and the destination device — in this case the 40 + 40's tape drive.

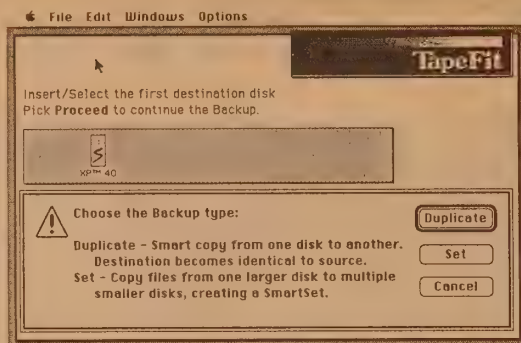
around \$60 for a 40 meg tape. However, it seems reasonable to believe that prices on these tapes will eventually fall as the advent of memory-hungry applications and massive HyperCard stacks create a wider demand for more, better and faster storage, and production increases accordingly.

The tape that came with my XP40 + 40 was already formatted and needed only to be initialized; extra tapes will need both operations performed (generally in the Apple/Mac world, "format" and "initialize" are used pretty interchangeably, but they are two distinct procedures here). The DataStream utility included on the hard disk makes this an intuitive and hassle-free endeavor, a simple matter of clicking appropriate buttons. DataStream will inform you as to the success of the operation; once the tape is formatted and initialized, you can perform the actual backup procedure.

Select the TapeFit icon from the Finder. Once TapeFit opens, you'll be asked to select whether you want to backup or restore, and to choose the device you want copied and the destination device.

TapeFit is exceptionally well-conceived software. It deals gracefully with the fact that the tape cartridges don't quite have a 40 meg capacity by compressing the copied files slightly, and also by giving you options as to how your backup copies can be made: a simple duplicate of the hard disk, which is the best choice if you've got less than 35 meg; a duplicate of documents only; a duplicate of application and system files only; or a duplicate of single large files (up to 31.9 megabytes). TapeFit also supports backing up to media other than SuperMac's DataStream tape drives, including floppies, another hard disk, or Bernoulli cartridges. (It will also allow you to copy the contents of a much larger drive onto several tape cartridges.)

The first hard disk backup you perform will probably be the most time-consuming; on subse-



The TapeFit software offers several types of backup—a duplicate of the source disk, or several types of selected-file backup.

quent backups the endearingly bright TapeFit will scan disk and tape, then back up only the files that have been created or changed since the last backup. And again, the backup procedure is intuitive and non-threatening; you're prompted for anything you need to do, given clear options, and presented with a running commentary on the progress of the backup procedure. When it's finished, you'll be prompted to eject the tape (and not allowed to proceed until you do.)

It's a good idea to have the tape ejected whenever you're not using it—if the Mac contrives to get itself turned off with the tape still in, it may not be able to see the tape when it's rebooted. This is fixable, but panic-inducing.

If you've only altered one or two files during your next work session, it's usually faster to simply back them up using the Finder from the desktop, moving their icons into the appropriate folders on the tape. If you're not quite sure what you've changed, or if you've made quite a few additions,

deletions and improvements, you'll probably want to use the TapeFit procedure. In either case, this is about as painless as backups are going to get, at least till they invent the Do What I Mean key.

Summary

My DataFrame XP 40 + 40 has been performing flawlessly in moderately heavy use for the past three months. It's been hauled around the Rocky Mountain states in a camera bag (kids, don't try this yourselves...and if you do, be sure to use the Park utility first...) and used in a variety of less-than ideal conditions, and it's been utterly unfazed by the experience.

Some users, especially those with a severe desk-space problem, may have a problem with the fact that the XP 40 + 40 is an upright device (8" high, 9½" deep, 5" wide) that sits by the Mac's side rather than under it. On the other hand, it makes a great modem stand. I'm also a little unnerved by the fact that there's no shutter or similar device protecting the tape drive from massive dust inhalation when there's no tape in the drive, but leaving the tape itself resting in the drive, but not inserted all the way, seems an adequate if inelegant solution. The currently exorbitant price (by personal computer standards, anyway) of the tapes themselves is a problem, but with luck a temporary one.

These minor caveats aside, I wholeheartedly recommend this device, which sets a new standard in efficiency and ease of use for tape backups. It's what we should have had in the first place. (SuperMac, 295 North Bernardo Ave., Mountain View, CA 94043, 415/964-8884. As this article was being prepared, SuperMac announced some design changes; this unit is being replaced by a 60 meg hard disk/40 meg tape configuration, which has a suggested retail of \$2595.) □

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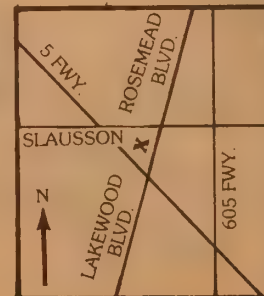
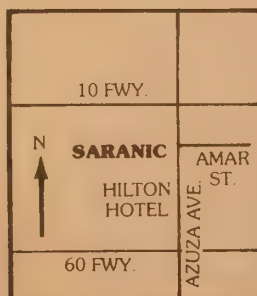
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ALL MY MODEMS

By Mary Eisenhart



The Prometheus ProModem 1200 is an intelligent and communicative modem. It is well constructed and takes heavy use in stride.

It all started with Tom McShane.

Tom's from Prometheus Products, Inc., and if he'd been his company's actual namesake his visit would scarcely have had a more far-reaching effect.

He turned up one day as I, newly liberated from a cranky typewriter, was trying to figure out the intricacies of MacWrite (this, I hasten to add, was quite some time back). He painted a glorious picture of how a modem would transfer our hardcopy-bound operation into a paragon of modern efficiency. I already had my nose pressed against the virtual candy-store window of online conversation, so I listened gleefully to Tom's scenario.

Eventually we got a modem line installed, and, after software hassles and other neophyte-specific hair-tearing, the modem worked. And the world changed.

For the better part of two years the faithful Prometheus ProModem 1200 has been sitting on my desk, braving heavy use and the occasional infusion of Peet's French Roast, and generally rendering itself indispensable. It receives stories from our far-flung writers. It sends finished stories to the typesetters. It downloads Newsbytes from The Source. It's been used to start and maintain two conferences on the WELL. It has never malfunctioned in the least.

In the meantime, two other modems came into my life, each of which offers some advantages for particular situations. Looking at each of these

three modems offers a good initial look at what's available in the 1200 baud world. So here, for your edification, are the Prometheus ProModem 1200, the Weltec 1202 external modem, and the Migent Pocket Modem.

All these modems are Hayes compatible and support both 300 and 1200 baud transmissions. All are used on Macs, although they also work just fine with IBMs and can be purchased in IBM format (meaning that the cables and software included will be for IBM compatibles rather than the Mac). All of them come with telecommunications software; however, it's my earnest advice, to beginners at least, to spring for a package like MicroPhone or Smartcom, because when you're trying to figure out this new world, the bundled packages have a way of expressing themselves in a singularly opaque manner (really, if you're a beginner, there's no real substitute for friends who know what they're doing). Borland's MacTerm, bundled with the Migent, is somewhat noteworthy because, though limited of feature, it installs as a desk accessory, so you can dial up your online system without leaving the application you're in. However, the bundled software should probably be looked at as an incidental courtesy rather than a serious factor in choosing one modem over another.

The Prometheus ProModem 1200

This is a serious piece of hardware. It boasts rock-

solid construction — a substantial, weighty metal case that's been designed for easy access to the modem's innards should you need to install its optional communications buffer card.

This card, expandable to 512K, allows the ProModem to receive files or perform automated functions even if your computer's being used for something else or turned off. The buffer can also be set to require a password from anyone trying to dial into your computer, and can act as a printer spooler.

If you don't need this card, you'll probably never have occasion to open up the ProModem; all its commonly-used controls and switches are conveniently located on the outside where you can get at them easily. The DIP switches, on the modem's underside, are easy to change but are probably just fine as they come from the factory.

All in all, the ProModem is a remarkably intelligent and communicative modem. It automatically senses whether it should dial pulse or tone. It supports auto-answer and autodial functions, and automatically redials busy numbers at frequent intervals. Indicator lights at the front keep you informed about your call's status, from baud rate to connection or lack thereof (Prometheus also offers an alphanumeric display option that tells you if the buffer's received any files lately and monitors your call progress in English).

If, like me, you're one of those who like as much feedback as possible while you're waiting for your call to go through (or not, as the case may be) and

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*Who Were The Industry's
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MicroTimes is now preparing its annual list of the most effective and influential people in the microcomputer industry for 1987.

The editorial staff of **MicroTimes** is asking its readers to nominate the person who they feel was the most influential in the past year. Along with this nomination **MicroTimes** is asking readers to include the names of up to ten other people in the industry that they feel have made an important impact.

You can help us by listing those people you feel deserve to be recognized for their contributions to the microcomputer world.

The people you nominate can come from any part of the industry, including, but not limited to, business people, engineers, developers or journalists.

For each person you nominate please include their full name, title or occupation and the company they work for. You may also want to include the reasons you chose to nominate this person (on a separate sheet of paper, if necessary), and we would appreciate your including a contact name and phone number for your nominee if possible. The only restriction is that for each person you nominate who works for your company, you must nominate another person who doesn't.

The deadline for ballots is October 15, 1987.

This is a major opportunity to recognize the people in our industry for their hard work and their achievements during the past year. The time you take to complete a ballot will be greatly appreciated.

Thank you for your nominations

Sincerely,
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Nomination for the most influential person in the microcomputer industry for 1987: _____

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want as much information as possible for immediate troubleshooting, you'll like the fact that the Prometheus has a built-in speaker with adjustable volume control, so you can hear the dialtone, busy signal, connect screech, etc., all at deafening volume if you like. (If peace and quiet is more what you had in mind, the volume can be turned down using the knob on the back of the modem.) The ProModem will also send messages to your screen about what's going on (Ringing, Busy, No Carrier, Redialing In 30 Seconds, etc.).

The modem also offers other convenient features, such as two phone jacks so you can plug in your phone and switch easily between voice and data modes. It includes an on-off switch on the back (and, while this smacks of the kick-the-television school of electronic troubleshooting, it's quite remarkable how effective it is to turn the modem on and off when some mysterious problem crops up).

Most of all, though, this modem works. It's a good choice for beginners because it's so reliable and communicative, and a good choice for advanced users because of its powerful features and options. The flawless performance of our office unit seems entirely typical — none of the Prometheus owners I've known has had a complaint, ever.

The only drawbacks to this modem are its price (\$349 list, not unreasonable in light of its features, but too much for many would-be telecommunicators) and, to a lesser degree, its bulk (11.5" x 6.5" x 2.3" — your briefcase won't hold much else if you've got the ProModem in it). These difficulties, however, are admirably addressed by the Weltec and the Migent respectively. (Prometheus Products, Inc., 4545 Cushing Parkway, Fremont, CA 94538, 415/490-2370.)

The Weltec 1202

Computer stores and swap meets are full of a bewildering array of Hayes compatible, low-cost 300/1200 baud modems. A few of them are turkeys; most are good, functional equipment. If your budget indicates that the \$100 — \$150 price range is about right, you'll probably find yourself in this part of the marketplace.

The Weltec 1202 is a good, low-cost modem that performs admirably; while it lacks a few of the Prometheus's niceties, it also shaves about \$200 off its price. It travels better, being about half the height of the Prometheus, and has a sturdy plastic case with very Prometheus-like indicator lights at the front. It also weighs far less.

We've put it to use performing all the Prometheus's tasks, from sending and receiving files to hours of WELL-hopping, and it has performed reliably and without trouble. Like the Prometheus, it's quite communicative and makes it easy to monitor your call's progress.

So what are you giving up in return for that \$200? Mostly niceties you can probably get along without — the most serious deficiency I encountered is that, unlike the smart Prometheus, the Weltec won't automatically redial busy numbers by itself, though it can be directed to do so from software. There's no on-off switch, and instead of a permanently attached power cord the Weltec has a jack for its included power supply; as long as it's plugged into the modem and the wall, the modem is on.

The Weltec also has a built-in speaker, so you can hear your call's progress; to adjust the volume (mine seemed to have been preset on Stun) it's necessary to disassemble the modem case and adjust the volume control potentiometer.

If you need to switch between voice and data modes frequently on the same phone line, you

may find it inconvenient that the Weltec has only one phone jack; otherwise, the single jack should be no problem.

Except for the easily-remediable lack of auto-redial, most of these factors are cosmetic or, at worst, minor inconveniences, and don't interfere with the modem's performance, which is excellent. If you're a Mac user on a limited budget, the Weltec offers the functions and reliability you need at a bargain price. (For information on the Weltec modem, call Hellman's, 415/453-7924. The Weltec sells for \$139.)

The Migent Pocket Modem

Even though I shamelessly did that very thing to my own assistant, I would not normally recommend this modem to a beginner, because it's one of the least communicative pieces of equipment I've encountered. It's got no lights, it's got no sound, and basically you never know how your call's going until you get a Connect or No Carrier message (and you still don't know if the line was busy, the remote system mysteriously died, or what went wrong). The documentation explains how to make it a bit more communicative by changing some settings from software; however, I've had no luck doing this, and anyway I'm used to its taciturn little personality by this time.

However, once you are connected, this modem transfers files with the best of them, and it offers some features the others can't match. Even besides its fetching red color, which is reputed to precisely match the paint on Wayne Ratliff's Porsche.

The Pocket Modem, you see, is about the size of a pack of extra-long cigarettes, and while its ads show it being slipped into the jacket of a nattily-dressed executive, it fits equally well in the hip pocket of your 501s. After two weeks of hauling Mac and Pocket Modem around the countryside, all I can say is that I hope Apple achieves similar feats with miniaturization Real Soon Now.

The Pocket Modem comes with a detachable 9-volt power supply; however, its real value to the traveling modemer comes from its ability to run off a 9-volt battery. There may have been some problems with excessive battery consumption on early models — I've heard various allegations that the Pocket Modem is a real battery hog, but in my own experience the 10 hours of battery life promised in the documentation is conservative. I usually get around 12 hours of use from each battery; however, a surefire way to kill a battery before its time is to leave your computer running with the modem attached. Besides lights and sound, the Pocket Modem lacks an on-off switch.

The Migent includes a non-volatile memory chip for storing a phone number and the configuration settings you choose from your software. Unless you disable this function, it will also send a warning bell to your computer when the battery starts getting low — early enough and persistently enough that you usually have plenty of time to finish your work, log out and change the battery without mishap. (Even if the battery dies, the information stored in the non-volatile memory is not lost.)

While its advantages on the road are unparalleled, the Migent also makes a perfectly acceptable everyday desktop modem if you need to use it that way. Its lack of feedback is a little daunting for troubleshooting purposes, but its operation is smooth and reliable once it's connected. It's also remarkably tough — mine continues to be trouble-free after two regrettable four-foot falls onto a quarry-tile floor, a practice I don't recommend to other users. (The list price on the Migent Pocket Modem is \$259; actual price varies considerably. For information, contact Migent, Inc., P.O. Box 6062, Incline Village, NV 89450-6062, 702/832-3700.) ☐

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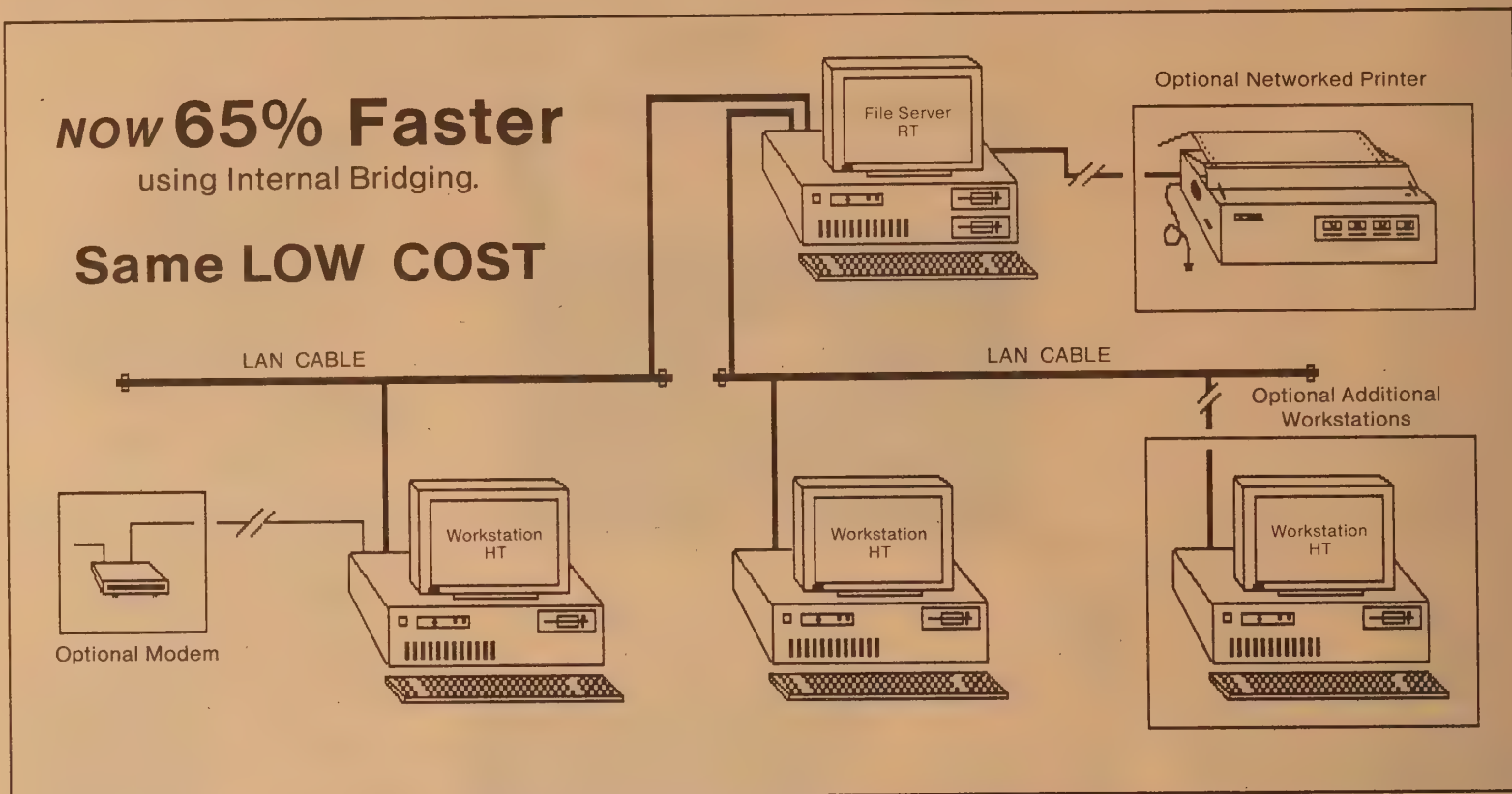
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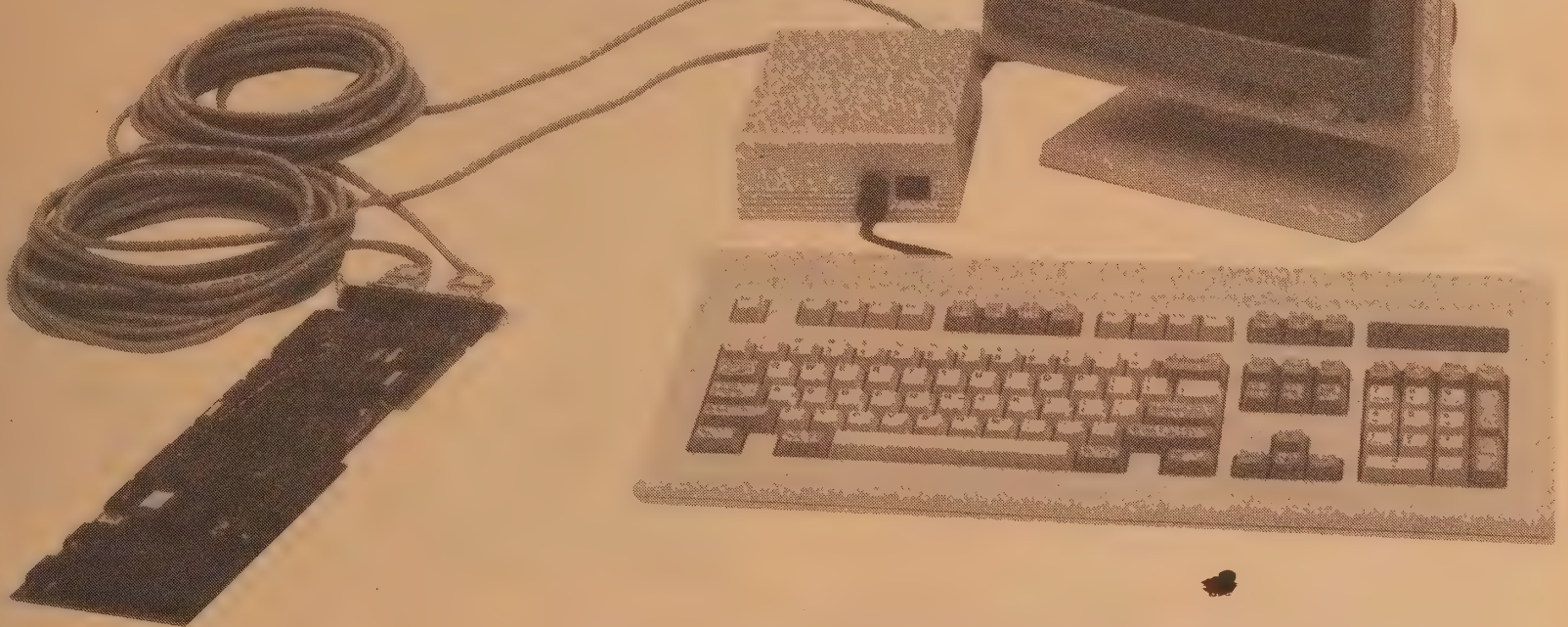
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The O-DOS operating system lays transparent on top of DOS and manages the multi-user environment, yet occupies only 16K of RAM. The O-DOS software can support up to nine stations including the host computer, and each workstation can be as far as 200 feet away from the host without sacrificing signal quality. Each unit can have it's own AUTOEXEC. BAT and CONFIG. SYS files, independent to the host system. The Intelligent Secretary System can also be easily integrated into any PC-NET or Novell based network system.

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PC-Talk 4

Novice-Friendly, Powerful Communications Software

By Robert Beauchamp

PC-Talk, from Headlands Communications, was written by the late Andrew Fluegelman and was the original Freeware™ program. Its newest incarnation, **PC-Talk 4**, maintains the exacting standards and simplicity of operation that Fluegelman demanded.

However, along with the bound manual and easy-to-read documentation there is also a \$129 price tag.

In many people's minds this cost will be justified by the communication program's ease of use. Those who buy this software will also be joining a community of over half a million **PC-Talk** users.

While many programs today get more and more complicated and pile on feature after feature, **PC-Talk 4** maintains a simplicity that allows even first-time users of communications software to set up and get online quickly.

We used **PC-Talk 4** on a Zenith 148, with two disk drives and 256K of RAM. (The program requires at least 192K of RAM, DOS 2.0 or higher, and will work with only one disk drive if necessary.) The Zenith is, as Headlands recommends, 100% IBM compatible. The modem used was the new Migent Hayes compatible 1200 baud Pocket Modem.

GETTING STARTED

The manual first directs the user in the prerequisite disk backup. Although it now costs money upfront, **PC-Talk 4** is still not copy protected.

Upon entering **PC-Talk4** at the **A>** prompt, you'll be told when the program is loaded; the program also checks to see if your modem is on. If you have just installed your modem for the first time, **PC-Talk** also provides a test to make sure your modem is configured correctly. The user can then call up the help screen by pressing the Home button.

The help screen contains all the commands available to the **PC-Talk** user. It can be called up at any time during any operation.

The first command the new user will probably use is **<Alt> D**, which calls up the dialing directory. The

dialing directory allows you to enter up to 990 different phone numbers. The Headlands BBS, which provides support for **PC-Talk** users, is already listed.

Entering new numbers is simple enough. The communication parameters are already set at the standard 1200 baud, No Parity, 8 bits, 1 stop bit. If the number you wish to call has different parameters, you change them here. **PC-Talk** stores this information and refers to it automatically when dialing.

There are two other places the communications parameters can be set. If, for instance, you do not know what the communications parameters for a particular bulletin board are before calling, you can press **<Alt> P**, and call up the parameters menu. Here you can change the parameters while online until they are correct.

The other place to change the parameters is in the default menu. Here, for example, is where you would change the default setting to 2400 baud rather than 1200 if you had a 2400 baud modem. This is also the place where you can change the colors of your screen if you have a color monitor.

It's important for the first time user to note that it is not necessary to go to these directories right off. All parameters can be changed in the dial directory for each number.

Dialing a number is automatic. The user simply enters the directory number of the bulletin board and presses return. The user will either get a "connect" message if the call is successful, or a "no carrier" message if it isn't. When using a more sophisticated modem the user may also be told if the line is busy.

And that, for the first time user who simply wants to get online, is all there is to it.

ONLINE OPERATIONS

Once you're online, the program allows you to transmit or receive files, commonly called uploading and downloading. It will also let you print incoming and outgoing data onto your printer as it goes over the



PC-Talk 4 is simple enough for new users and provides the features many experienced users require.

line. You can also capture screens to your printer.

PC-Talk allows the user to split the screen while online. This way you can edit any text to be entered before it is sent.

To send or receive a file, you enter the file name and then choose whether you want to use the XMODEM error checking protocol. Once this is done the program splits your file into blocks and charts the progress of the files on the screen. It tells you the number of the blocks as they are received and verifies that your computer has successfully received the block. If the XMODEM protocol detects an error, due to phone line noise or other problems online, it will give the message "***Resending block ...". You can terminate transmission at any time by pressing the **<Esc>** key. **PC-Talk 4** will return you to the main program automatically at the end of the transmission.

ADVANCED FEATURES

For more advanced users, **PC-Talk 4** provides a number of features. It allows you to create input strings and macros that get you through repetitive logon procedures quickly. It also provides TTY, VT100 and VT52 screen emulation for communicating with mainframe computers, although not all features of these terminals are supported.

Another advanced feature of **PC-Talk** is its ability to access DOS. This

allows the user to exit **PC-Talk**, initiate any DOS commands, and return without any disk swapping or reloading of programs. It also allows you to run your favorite word processor or spreadsheet while in **PC-Talk**. This ability is limited, of course, by the amount of memory you have available on your computer.

PC-Talk makes the management of files easy as well. The user might, for example, keep a disk of files to be uploaded in the B drive. By pressing **<Alt> V** and giving the filename, the user can view any file stored there. It is also possible to print out or delete any file.

PC-Talk's manual is complete and explains each aspect of online communication in easy-to-understand language. It even provides a whole chapter on the "Seven Mysteries Of Data Communication" that should help any novice user leap the hurdles involved in getting online. Even without referring to the manual, **PC-Talk** makes it easy to learn the program. All you have to do is call up each command and see what it does.

PC-Talk 4 is the latest version of a time-tested and immensely popular program that is simple enough for new users and provides the features many experienced users require. By sticking to these principles, it offers increased power and convenience while remaining true to the vision of the original. (Headlands Communications Corp., P.O. Box 8, Tiburon, CA 94920, 415/435-0770.) □



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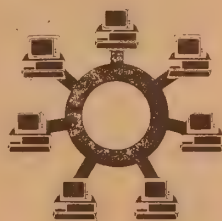
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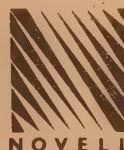
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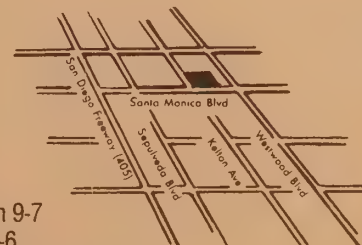


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InstaPlan:

The Project Manager For Real People

By Woody Liswood

Truly innovative software makes the difficult easy and obvious. The first time I booted *InstaPlan*, I felt that I'd found the first project planner that made sense, was easy to use and helped, rather than hindered my planning. It made me wonder why the *InstaPlan* interface was not used by the heavyweights of the field.

As a human resource consultant, I use project planning software to estimate project costs, prepare PERT and GANTT charts for client use in proposals and during project reviews, and to allocate resources to insure that projects have adequate staffing for completion on time and within budget. If you have spent significant amounts of time with either *Time Line* or *Super Project*, as I have, you will appreciate *InstaPlan*'s ease of use and good looking display graphics, both on screen and on hardcopy.

One of the problems associated with project planners is that they assume you already know and understand critical path methods and/or PERT networks. If you do, you can start using their programs immediately. If not, there are normally short tutorials and expositions, which may serve to confuse the neophyte user rather than help. Just in case you forgot, the critical path is the shortest path through the series of project steps to get from the beginning to the end. PERT stands for Program Evaluation and Review Technique. The PERT network takes separate project steps and links them to show all subordinate and subsequent steps along with all of the interrelationships and milestone events so that a project can be tracked and displayed somewhat like a gigantic flow chart.

THE INSTAPLAN APPROACH

The *InstaPlan* metaphor starts with an outline rather than with a critical path or PERT description. You enter your projects as if you were creating an outline of the project steps using your favorite word processor or outliner. As you generate this activity outline, you can continue to add detail as it occurs to you or as it happens during the work itself. When you are finished, according to the *InstaPlan* documentation, "You have

what planning theorists call a Work Breakdown Structure."

To help you in analyzing your work, *InstaPlan* allows you to collapse the outline to higher levels or expand it as you wish. During the initial creation of your outline, you use the arrow keys to move the activity element you are defining to the left or right. As you move an activity to the right, you automatically create a higher level grouping just above that current activity.

As you go from one level to another *InstaPlan* identifies each activity or group of activities for you using a + or a - sign to show whether the current line you are working on is the start of an activity or is the detail within an already defined level. As the outline is created, a tab on the far right of the screen allows you to set the length of time which the activity should take. If you choose to use elapsed time, the elapsed time is in continuous days, not work days, so that if you want a task to end one week from its start, you would use an elapsed time of seven days. *InstaPlan* also keeps track of all changes in the detail lines so that the groupings show the consolidated costs and times for their subsets of activities. For example:

- + Custom Salary Survey (25ed)
- Meet with client to determine needs [1ed]
- + Prepare Proposal (14ed)
 - Develop Job Descriptions [5ed]
 - Develop Questionnaire [5ed]
 - Develop Participant List [7ed]
- + Gain Client Approval before continuing (15ed)

The + in front of the outline shows a higher level activity. The numbers within the {} show consolidated figures which are automatically tracked by *InstaPlan*. The numbers within the [] are numbers which you enter. The numbers do not need to add up, since you can set starting dates as you wish and can have several activities occurring simultaneously.

InstaPlan works from a series of views. As you create your outline, you can instantly change from the activity outline, to a GANTT chart, or to a spreadsheet where resources and costs are kept and consolidated. In each of these views you can manipulate and edit the activity outline to see what effect your changes have

InstaPlan works from a series of views. As you create your outline, you can instantly change from the activity outline, to a GANTT chart, or to a spreadsheet where resources and costs are kept and consolidated. In each of these views you can manipulate and edit the activity outline to see what effect your changes have upon the total project.

upon the total project. For each major level in the outline, *InstaPlan* keeps track for you of elapsed time and total costs.

InstaPlan works from a horizontal menu which some folks might call a Lotus style menu (on the bottom of the screen, however, so Lotus cannot sue them for a look and feel violation).

The main menu is invoked with a /. From it you can switch to any of the views, locate strings, insert or edit lines in the activity chart or spreadsheet or resource views. You can delete lines or groups of lines, invoke a help menu, move lines or groups of activities, set a multitude of options for dates, dollars, colors

and whatnot. You can also save and quit, adjust the timing to insure adequate resources, undo a recent deletion, print a variety of reports, set the schedule dates for each line in the chart, or set a focused view of the chart.

The documentation is a spiral bound book illustrated profusely with screen displays. It is part reference material and part tutorial. It has both an index and a table of contents. While it is written well, in my opinion, it suffers from doing too many things at once. Since it combines the tutorial along with the explanation of the program features, it is easy to overlook any particular feature you might be looking for.

For me, a better approach is to keep the tutorial separated from the reference section so that both may do their jobs. Another criticism here is the language. Although written in a straightforward breezy style, the manual refers to man days and man weeks. A modern alternative would have been to call these work days or

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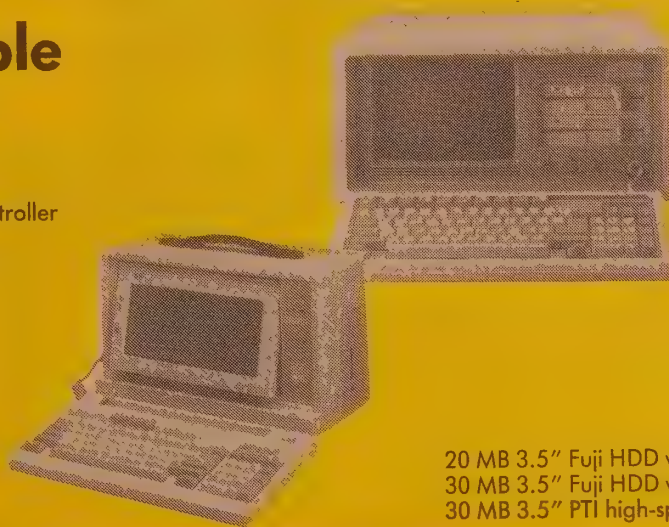
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work weeks and not irritate over half of the population.

The prime view within InstaPlan is the activity view. The activity view shows the full outline using the whole screen. Along the right side of the screen the elapsed time planned for each activity as well as the subtotals and totals for major activity groups is shown.

The GANTT view shows a truncated activity view on the left side of the screen (although it still shows the elapsed times), and a GANTT chart on the right side of the screen with a vertical bar to show the current date. Shown on the GANTT are the critical path, normal work, delays, milestones, slack time, actual times and reference times.

InstaPlan allows you to save a plan as a reference plan. The reference plan then becomes a built-in baseline. You continue to make changes in your plan as the activities actually happen so that you can, at any time, compare planned to actual. This way you can visually see the difference between a planned and approved plan and the actual happenings. While working on the GANTT view, you can still edit and change the activity view.

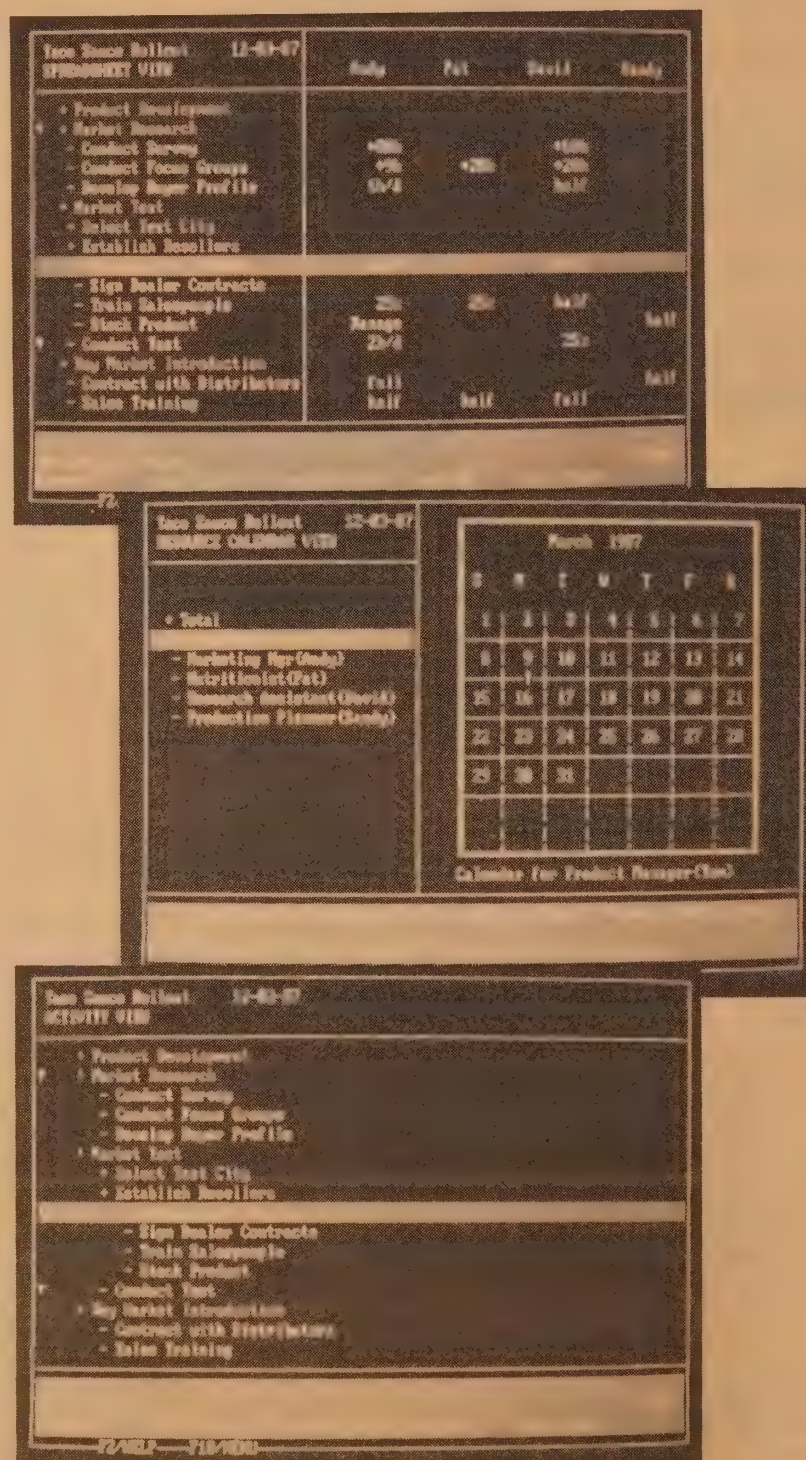
The PERT view is not the typical PERT chart. It shows, vertically, the relationship between the currently selected activity and all the predecessors and subsequent activities. It does not show all of the paths which might be currently active or which might bypass the selected view but be performed during the same time frame.

The resource view shows all of the resources which have been entered into the system, the current billing rate and working hours for each, as well as the method of accrual. Like other project planners, you can set the hours in a working day, the point at which costs accrue in the project and the method (such as hours, days, and weeks) which is the appropriate measure of the resource. Resources are individuals, groups, fixed costs, variable costs, and anything else you wish to use.

The spreadsheet view shows a truncated activity outline along with a column for totals and a column for each of the defined resources. You can then add the appropriate accrual for each of the resource category, and InstaPlan will then do the math for you and total each up to the appropriate levels. If you have worked with *TimeLine* or *SuperProject*, you will appreciate the ease with which you can assign, add, subtract, and play what-if with the resource assignments.

The resource calendar view allows you to set a specific calendar for each resource. You can specify how many hours each resource can work on any single day. InstaPlan will then level the project for you automatically, if you wish, and extend the plan as necessary to accommodate the schedules for all of the resources.

For each activity you can show almost anything you might think of concerning project planning and control. The GANTT chart graphics as produced on a HP LaserJet are among the best I have found, and fit well into professional presentations.



InstaPlan permits you to visualize and plan projects from a variety of perspectives—for example, an outline-type listing of necessary activities, a calendar for scheduling, and a spreadsheet format showing responsibilities of individual employees.

Lastly there is a resource loading view. It graphically illustrates the cost or quantity of work assigned to the resource.

InstaPlan has flexibility in determining the system variables and constants. You can specify work time, elapsed time, and quantity of work in hours, days, weeks, months, quarters or years. These can all be intermingled so that you can specify the time period which best matches the activity. For example, you can specify a resource as a single project team composed of ten individuals. You can then specify that resource as working one month, which would calculate as ten individuals working for the allowable work time that month.

A critical part of any planning software is the methodology which determines dates, sequencing, interdependencies and independencies. As you create your outline, InstaPlan assumes that all activities are sequential, with a new activity starting when the previous one ends. Using the schedule view allows you to make any activity or group of activities start before a certain date, to start after a certain date, to overlap another activity, or to pad an activity for a specified number of days. It also allows you to set a start date, to specify a milestone, to make any set of activities independent from the main sequence, or to remove any set of dependencies which had been previously created.

The printing and report section of InstaPlan is a joy. The print menu allows you to define, change, remove and select previously defined reports for printing. You can also select more than one report to run when you print as well as make multiple copies of each report. The types of reports are as you would expect: activity, resources, schedules, resources and GANTT chart graphics as produced on an HP LaserJet are among the best show multitudes of goodies about a plan. For each activity you can show such items as start and stop dates, planned vs. actual costs, schedule dates, and almost any other thing you might think of concerning project planning and control. The GANTT chart graphics as produced on a HP LaserJet are among the best I have found, and fit well into professional presentations.

I have some minor criticisms of the printing routines. Although you can make multiple copies of a report, it prints all pages sequentially, then goes and does it again. If you have a laser printer, this is a waste of time, since after the page is made up in the laser, copies should just be a matter of repeats and form feeds. The other criticism is that there is no support for digital plotters. Being able to use a plotter and control the colors of the chart elements is an important part of producing professional presentations. Producing the charts directly on the transparency material would facilitate the production of presentations.



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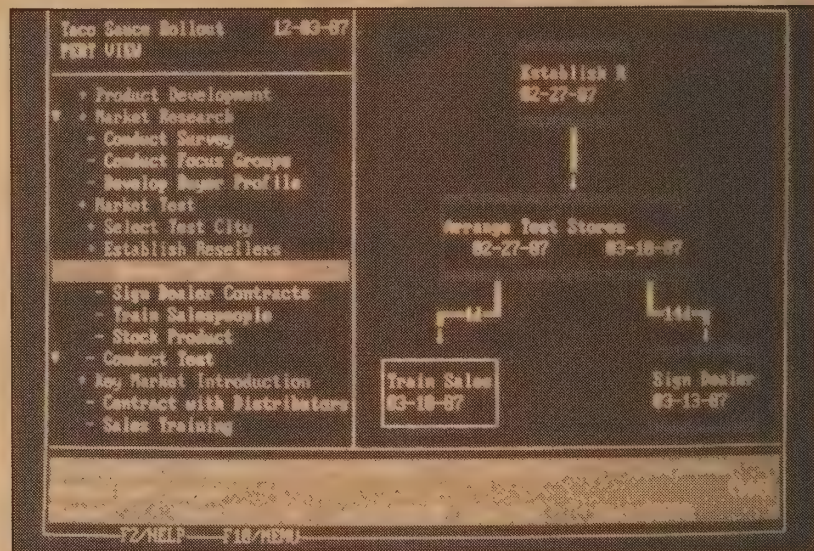
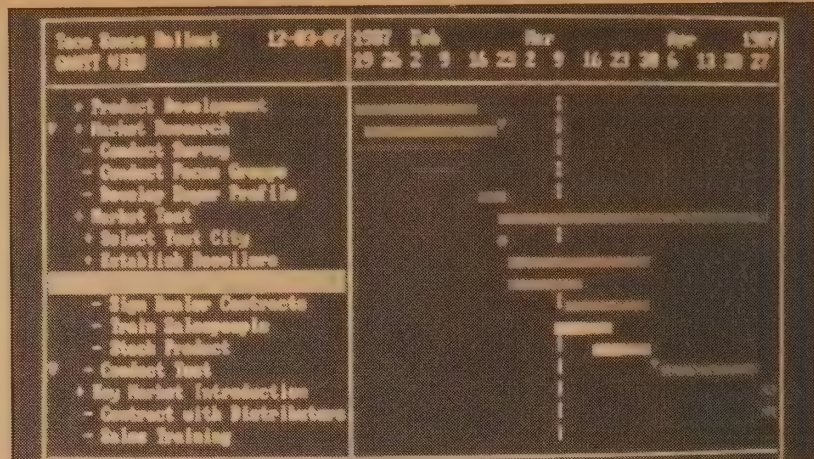
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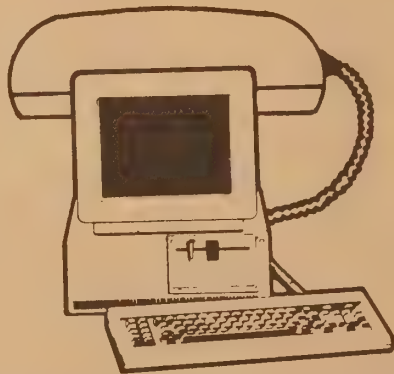
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Instaplan also allows the creation of GANTT and PERT charts for graphics-type presentations.



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To save you from keying in common elements from plan to plan, there is the capability to transfer plans within *InstaPlan*. You can append parts of other plans into the current plan if, for example, you wish to capture the resources already defined in the previous plan. You can also merge plans so that you can use with modifications any earlier plan which may meet current needs. During the merge, you can select activities, networks, resources, calendars or the entire plan.

You can also transfer information between word processors, *Ready*, *Treeprinter*, *Lotus 1-2-3* and *dBASE III*. In all cases, the capability is for two way transfers. I have not heard of *Treeprinter*, but the documentation says that it will take a file in a ".RDY" format and create a flow chart type of output.

The program occupies about 468K. The rest of RAM, up to 640K, is available for the actual plan. *InstaPlan* does not support any of the extended memory systems. This amounts to a plan of around 600 or so activities each using about two or three resources. The documentation states that with no resources, *InstaPlan* will process approximately 1,400 activities.

The earliest date allowed in *InstaPlan* is January 1, 1986. The latest is December 31, 2005. The maximum or minimum value accepted is 2,147,000,000. The minimum time interval is one hour, and the

maximum is nineteen years. The plan can have up to 11 levels in the activity outline. It can also have up to 11 resource levels. All else is limited only by available memory.

CONCLUSIONS

Do you understand critical path networks and agonize over PERT charts? Do you spend hours rearranging networks when, after you get things placed properly, you realize you left out two critical elements, or the plan changed and you now need to do a few more tasks between some already planned tasks? Have you agonized how to change resource time allocations from days, to weeks, to hours, to percent of time, to elapsed time, to actual time work, to ...? Do you wish you could answer, graphically, the questions about where are we now, or what did the latest set of changes do to our future plans? If you use project planning software to estimate costs for projects, do you feel that the graphics are the most important part of the estimate? Do you wonder why what seems such a simple task really appears quite complicated? If you answered yes to any of those questions, *InstaPlan* deserves your attention. (*InstaPlan* Corporation, 655 Redwood Highway, Suite 311, Mill Valley, CA 94941, 415/389-1414)□

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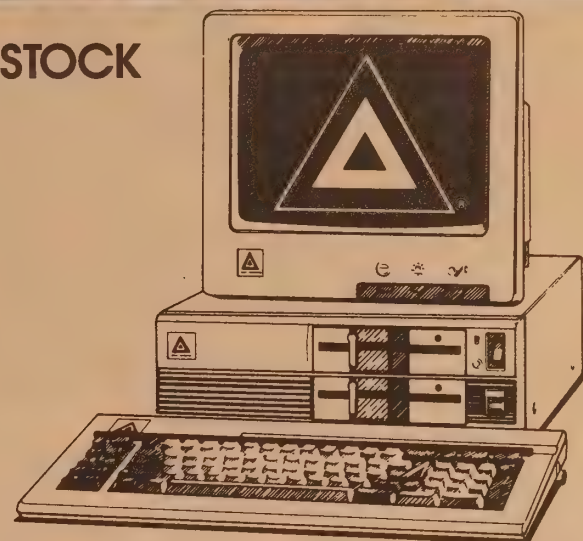
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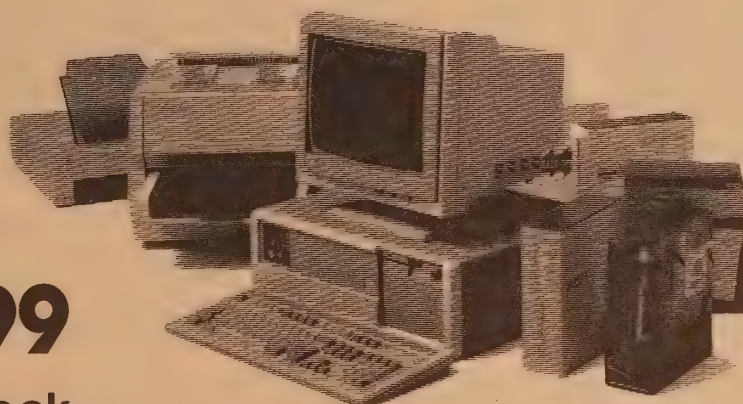
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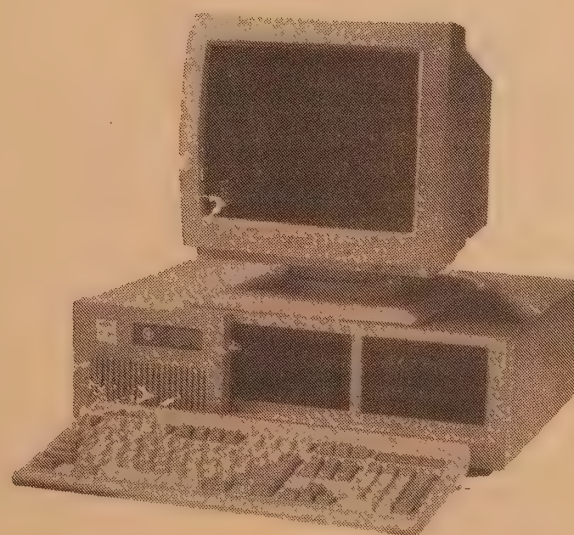
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Tymnet is a packet-switched data communications network that provides access to large data bases through local telephone lines. Among its many services Tymnet allows two dissimilar devices, that wouldn't ordinarily be able to communicate, to talk to each other.

Business Communications Adapting To Changing Times

By Robert Beauchamp

In the early 1980s Tymnet dodged a bullet. The personal computer market had grown and many people discovered that they no longer needed to access mainframes. This was bad news for Tymnet's parent company Tymshare, as the timesharing business became less and less profitable.

Back in the days before PCs, the people at Tymshare were the ones that had the idea of buying their own mainframe and renting time on it. By the middle and late '70s, Tymshare had experienced phenomenal growth and had become a massive company.

Tymnet was developed so users could access the Tymshare computers over the telephone. However, by the time Tymshare began to see its market dwindling, Tymnet had developed into more than just a server, offering its customers its own applications and services.

In 1984, McDonnell-Douglas, of aircraft manufacturing fame, bought Tymshare to add to its ever-expanding information systems division. Although Tymshare still had a part to play, it was Tymnet that had caught McDonnell-Douglas' eye. Tymnet was profitable and popular, and was offering businesses online database access solutions at an affordable price.

The FCC Threat

This year another crisis looms which might do to Tymnet what the PC did to its parent. The FCC is proposing that online access charges be raised for long distance communication using packet-switched networks. Much of the focus of the battle with the FCC has been over how the rising cost of telecommunications will affect individual users on home computers. In the case of Tymnet, however, it will be the businesses that make up the majority of Tymnet's customers that will suffer.

According to Don Parkman, public relations coordinator for Tymnet, the FCC ruling would make costs prohibitive and create a "difficult situation" for Tymnet and other network systems. Tymnet is doing its best to dodge this bullet.

Tymnet Services

Tymnet is a packet-switched data communication network. Its basic service is providing access to large databases through local telephone lines. Tymnet provides local access to over 650 cities nationwide. It also has an extensive international service that provides access to 65 countries. This is very important to the business user who has multiple remote locations which need to com-

municate with one another. This way the business does not have to string lease lines or use WATS or even regular long distance. It is far more economical to make a local call and hook up to the computer on the network.

According to Parkman, "A network is basically a large capital investment that we make so you don't have to. We've put into place this gigantic network. Think of the office down the hall with the local area network: maybe five or six PCs are on it, they are all hooked together, and they can talk to one another. Now magnify that 10,000 times. That's what we provide people. They don't have to go out and spend the money to hook up all this stuff. They just pay a low monthly fee. They can have us manage it, take care of all the problems, use our advanced technology and save themselves headaches and money in the process."

Tymnet is useful not only for those in remote locations but also for those in central locations trying to access information in places where they can't afford to put personnel, a process known as outdial. Parkman describes it this way, "You can do outdial if you were to have a remote PC out in the wilderness and you needed to talk to it once a week.

Say it was monitoring a pump-house. You need to flow information from your mainframe which would control that thing. How could you do that if you didn't have a person out there with a PC?

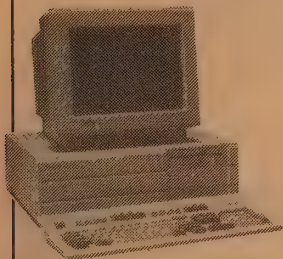
"What you can do is dial into the Tymnet city nearest to that PC. The node on the network at that point can be instructed to call out to that PC. With an auto answer modem on the PC, it will connect up and you'll be able to exchange information. What that does is save you from having to hook up a lease line out to this remote location."

Tymnet is useful to those businesses that want to manage their own networks as well. If a business has a large enough data requirement to justify some financial outlay in the beginning, it will save itself access or connect time charges along with other online charges later. This also allows the business to manage the data in the way it wants. Tymnet will, however, provide network management for those that desire it.

Along with servicing the needs of businesses directly, Tymnet serves businesses indirectly. You don't have to be a customer of Tymnet to take advantage of it. Many of Tymnet's customers provide database and timesharing services that other

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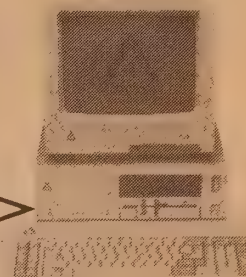
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“What we’re basically doing is taking people with vastly different equipment and needs and providing them with a service that can be molded to their particular situation.”

—Tymnet’s Don Parkman

individuals and businesses can access. They include such areas as accounting, law, investments, bulletin boards and sports. There are thousands of databases and services connected up to the network. The person interested in using one of these services gets a password from the service provider which accesses the host. Tymnet keeps track of the traffic and gives the provider a full detailed billing report. The service provider then bills those people who use the service. To the user, Tymnet is virtually transparent.

Among the online services a user can access on Tymnet is the Electronic University Network, run by TeleLearning Inc. EUN uses telecommunications technology to enhance traditional continuing education programs. EUN serves as a telecommunications link between students and various accredited colleges and universities throughout the country. The students can take graduate level courses in business, as well as undergraduate courses in the liberal arts and sciences. Students work at their own pace any time of the day. University and college credits are awarded.

Tymnet provides a number of value added features for its customers. Included among these are electronic mail, error detection and correction, protocol conversion and data security.

Protocol conversion on Tymnet allows two dissimilar devices that wouldn’t ordinarily be able to communicate to talk to one another. This is especially important for those who have IBM mainframes hooked onto the system. You need an IBM terminal to speak one to one with the mainframe. One of these terminals, a 3270 for example, could cost as much as \$10,000. Tymnet’s protocol conversion allows the customer to purchase asynchronous terminals for around \$5-600, and Tymnet converts them to 3270 emulation. Parkman states that “We can support any computer you can think of.”

He explains, “When you’re on your PC and using SmartCom or Crosstalk, you’re using asynchronous communication. There are plenty of people out there who are using things that don’t talk asynch-

There’s x25, for example, which is synchronous communication and is actually the CCITT recommendation for packet switching. That is something we can handle on either a dedicated or dial-in basis. What we’re basically doing is taking people with vastly different equipment and needs and providing them with a service that can be molded to their particular situation.”

A major issue in telecommunications today is data security. Tymnet addresses this in a number of ways. Parkman maintains that Tymnet’s data is among the most secure available. Tymnet offers password protection into the network and monitors logins. If someone tries to log in three times, the system drops them. This way random number generators are rendered useless.

Tymnet also has a unique system of packetizing data. This method combines data from more than one customer into a single packet. This, according to Parkman, makes decoding and decryption of that data virtually impossible.

It is the variety of protocol conversion, data security and customer service that Parkman believes sets Tymnet off from its competitors. One of the best ways a potential user of Tymnet can get acquainted with the network is to dial in to the free informational database Tymnet provides. In this database are lists of all the database and timesharing services available on Tymnet, local access numbers, certified products and sales office information. Interested users can call (800) 336-0149 to find out the access number in their area.

The Future

Tymnet’s immediate future is uncertain. Tymnet has been growing continually, and Parkman says that there always has to be expansion in this industry as well as innovation. Tymnet has grown as customer demand has warranted. He predicts that Tymnet will be hit very hard if the FCC plan to raise long distance access charges goes through. “We are faced,” he says, “with a crisis with the FCC levying access fees. It wouldn’t be a good thing, and obviously we’re taking major steps to defeat it.”

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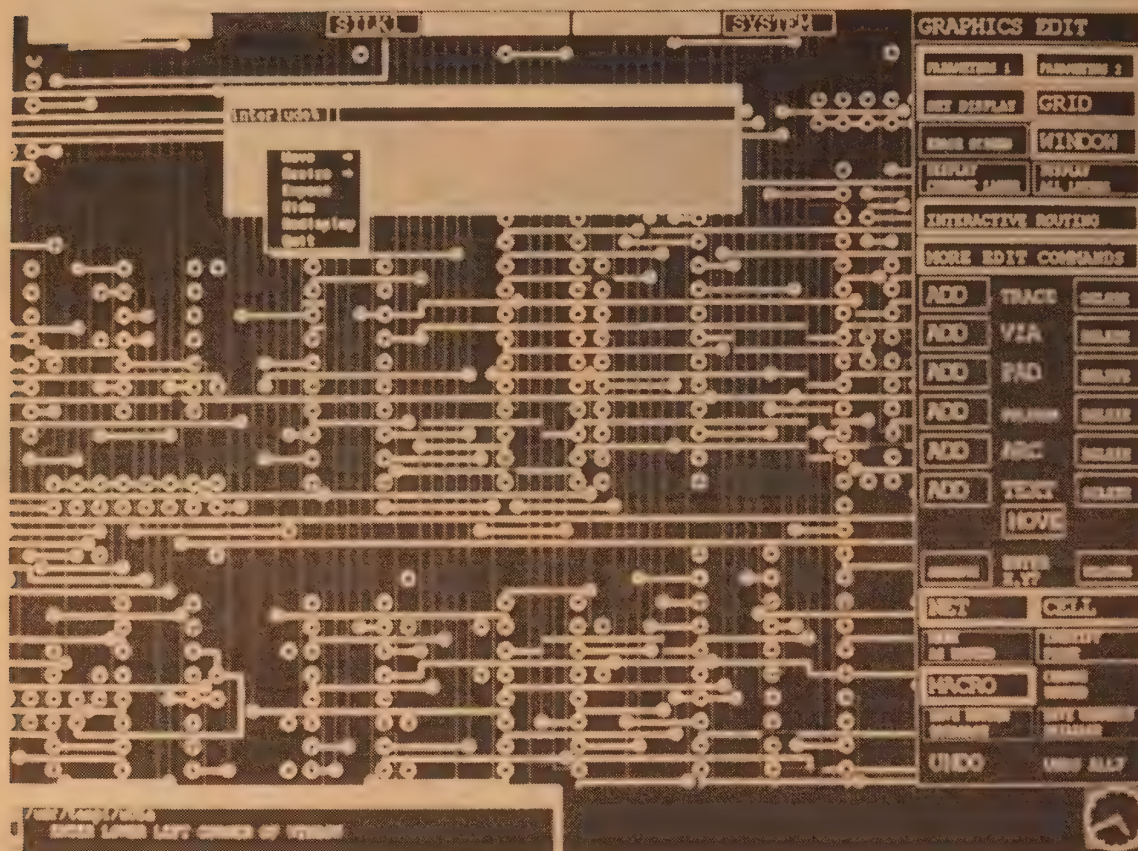
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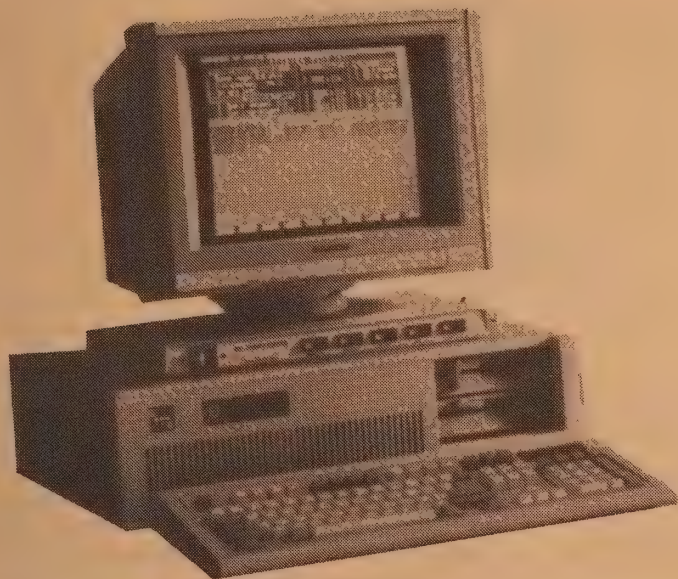
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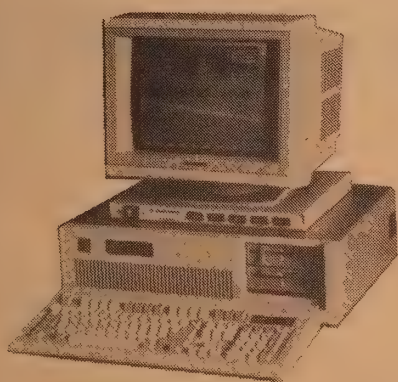
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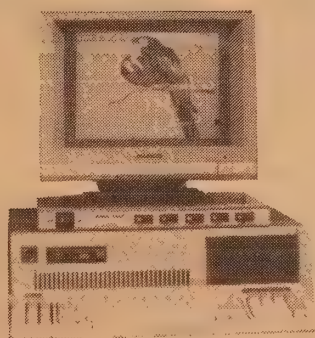
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UNIX

How Fast Is It?

Benchmarking The Compaq 386 And The Sun 3/50

By Bennett Falk

Nearly a year has gone by since the introduction of the Compaq Deskpro 386.

And today, despite the avalanche of ballyhoo, hardly anyone knows just how powerful a machine it really is. Software to exploit the full capabilities of Intel's 80386 processor is not yet plentiful. Certainly, 386-based machines run DOS applications faster than any of their predecessors, but that's no surprise. Being faster, they are also more difficult to time with a handheld stopwatch, the traditional tool for DOS performance measurements.

The Motorola 68020 processor has been around a little longer than the 80386. Like the Intel chip, it has 32-bit architecture and is designed to run at speeds from 15 MHz up. Unlike those with Intel chips, computers based on the 68000 family have run a bewildering variety of operating systems, including a number of UNIX implementations. Widely recognized as a good processor for multi-user systems, the 68020 chip has spent most of its commercial life to date buried in computers larger than a desktop.

With Apple's 68020-based Macintosh II and big price cuts on Sun Microsystems workstations, the 68020 is beginning to acquire a much wider audience. Consequently there has been considerable interest in comparing 386-based computers with 68020-based computers, but without a common operating system, the comparisons that have been made so far (for example, see the article "High Tech Horsepower," BYTE, July 1987) have been more or less limited to measurements of processor performance only. Now that UNIX is available for the 80386, it is possible to benchmark these machines as complete systems.

UNIX Benchmarks

The idea that UNIX can provide tools to measure hardware performance is hardly new. In August of 1984, BYTE published "Benchmarking UNIX Systems", an article by David F. Hinnant in which fifteen mini- and micro-computers of wildly varying capabilities (from the Apple Lisa to a VAX 11/780) were put through a suite of eight tests. Each of the machines tested by Hinnant ran one version or another of UNIX ranging from Version 7 to 4.2 BSD.

Hinnant's test suite included:

1. A "disk write" test to measure the speed with which a process can create a good-sized (130K) file. (Listing 1)
2. A "disk read" test performing 256 seeks to random places in the file created by disk write test and reads of 512 bytes from each of these locations. (Listing 2)
3. A pair of tests to measure the overhead involved in performing a function call in a C program. The two tests each perform 50,000 iterations of a simple variable assignment, though

TABLE 1

(All Times in Seconds) (Compaq)(Sun 3/50)		
Executing dwrite		
real	0.44	1.66
user	0	0
sys	0.28	0.54
Executing dread		
real	0.44	1.62
user	0	0
sys	0.26	0.47
Executing fcal		
real	0.35	0.4
user	0.2	0.28
sys	0	0.01
Executing fcall		
real	0.19	0.13
user	0	0
sys	0	0.02
Executing loop		
real	2.06	2.15
user	1.9	1.94
sys	0.03	0.01
Executing pipes		
real	1.41	3.55
user	0	0
sys	0.6	1.65
Executing scall		
real	2.45	3.73
user	0.26	0.69
sys	2.08	2.8
Executing sieve (100 iterations 1899 primes.)		
real	11.3	14.16
user	11.1	13.19
sys	0.05	0.05

one uses a function call while the other uses the built-in C assignment operator. The difference in execution time between these tests indicates function call overhead. (Listing 3)

4. A "loop" test, which executes an empty loop 1,000,000 times. (Listing 4)

5. A "pipe" test to determine the speed with which one process can pass 500K of data to another. (Listing 5)

6. A system call test to gauge the overhead of switching to "kernel mode." This is achieved by performing a simple system call 25,000 times. (Listing 6)

7. The ever-popular "sieve" benchmark that identifies prime numbers. The version of this benchmark used below performs 100 iterations of the test rather than the 10 repetitions that

were used in Hinnant's test suite. (Listing 7)

8. A "shell" test which times the execution of a chain of common UNIX commands and simulates a multi-user load. (Listing 8)

In addition to running the BYTE tests, it is also instructive to measure the time required to compile the various tests. Except for the shell tests, the BYTE benchmarks are written in C and should compile without modification on any UNIX system.

The Machines

The tests were run on two machines: a Compaq 386 and a Sun workstation (3/50). These machines were chosen because they are roughly price compatible representatives of their respective processor families.

The Compaq was equipped with a 16 MHz 80386 processor, an 80287 co-processor running at 8 MHz, 2 MB of memory, and a 40 MB disk drive with an average access time of less than 30 milliseconds. The version of UNIX running on the Compaq is SCO XENIX System V. Throughout the tests, only one user was logged in on the Deskpro 386.

The Sun Workstation was equipped with a 15 MHz 68020 processor, 4 MB of main memory, a 70 MB SCSI disk drive. The Sun machine runs release 3.2 of Sun's port of UNIX 4.2 BSD. As with the Compaq only one user was logged in during the tests.

The Procedure

A pair of shell scripts were created to run the benchmark suite (Listings 9a and 9b, "run_run" and "run_bench.sh"). These scripts were created for this benchmark effort and were not part of Hinnant's article.

The "run_run" script repeats "run_bench.sh" ten times and does some cleanup. "run_bench.sh" first removes any executable files left over from previous runs and then compiles the tests in sequence, recording the time taken by each compilation. Once the tests are compiled, each test is then run once and timed.

All timings were done using the "time" utility, which returns both elapsed time and CPU time. CPU time is divided into time spent executing "system" calls (privileged routines that provide access to resources under the control of the UNIX kernel, usually protected from interrupts) and the time spent executing non-privileged or "user" instructions. Total CPU time for any test is the sum of these two figures.

The Results

The results of these tests are summarized in Tables 1-3, and the numbers speak for themselves. In each case, the times recorded are averages from ten repetitions of "run_bench.sh".

Table 1 contains the results of running the programs in Hinnant's test suite. Of the two machines compared here, the Compaq Deskpro 386 has a definite performance advantage on these tests, but this advantage varies considera-

TABLE 2 - Shell Test

	Number of concurrent Tests (Times are elapsed time in seconds.)					
	1	2	3	4	5	6
Compaq 386	2.2	2.12	3.34	4.34	5.04	5.93
Sun 3/50	4.15	5.26	8.54	9.51	12.68	14.97

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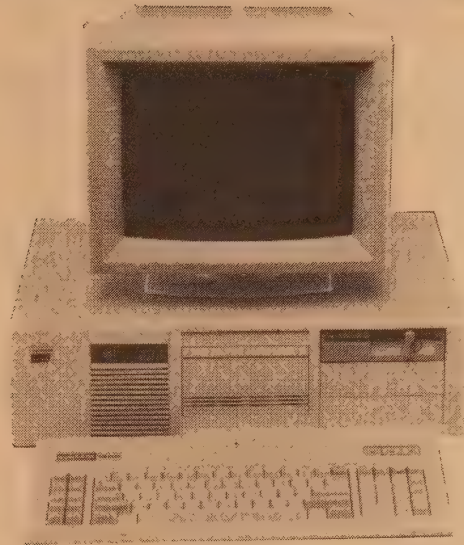
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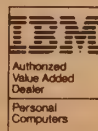
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bly from test to test. The Deskpro running XENIX performs the disk write test in approximately one quarter the time required by the Sun. The machines are closer in the sieve test, which is computation intensive, but the Compaq still performs the test in about 75% of the Sun's time. The only single test in which the Sun bested the Compaq is the "assignment" portion of the function call test.

Table 2 contains the timings for the shell test. On each computer the shell program was run first by itself. For each successive run another process running the same program was added until six copies of the shell test were running simultaneously. Both machines showed some degradation in response time as the loads increased, but the Deskpro posted much faster times for all the various loads performing the tests in 39% to 55% of the Sun's time for the same load.

Listed in table 3 are times for compiling each of the benchmark programs. These are the most striking results produced by any of the tests. The compilation times show the tremendous advantage that accrues to systems which do efficient cache and buffer management.

The compilations consisted of eight successive calls to the C compiler. Compiling the first program, both computers had to load the compiler from disk, and there is a difference between them of roughly .6 second. For subsequent compilations, however, the XENIX system had to read very little from disk, finding much of the compiler code already buffered in memory. Consequently the second call to the compiler took less than half the time required by the first compilation. The Sun 3/50's time also dipped with the second compilation, but not nearly so dramatically. The ability of the Compaq/XENIX combination to pull recently used code from RAM buffers instead of from disk undoubtedly accounts for some of its speed in the shell tests as well.

The results of these tests invite two general comments. First, the Deskpro 386 running XENIX is a faster system than the Sun 3/50. This is not entirely unexpected: the 3/50 is a relatively old product, and a new, more powerful model, the 3/60 has already been introduced. Still, it is surprising that the 80386 based machine is as much faster as the tests show it to be and that this speed is not a function of the processor alone.

Finally, both the machines tested posted faster times than the machines benchmarked in Hinnant's article of three years ago. That in itself speaks very well indeed for the advances in microprocessor technology in the past few years. It is doubly astounding that this level of performance is available for well under \$10,000. □

TABLE 3
(All Times in Seconds)

Compiling dwrite.c	(Compaq)	(Sun 3/50)
real	7.62	8.29
user	1.24	1.41
sys	2.25	1.55
Compiling dread.c		
real	3.3	7.35
user	1.29	1.51
sys	1.17	1.49
Compiling fcalle.c		
real	2.67	6.93
user	0.7	1.03
sys	1.14	1.39
Compiling fcalla.c		
real	2.54	5.93

user	0.68	0.92
sys	1.08	1.34
Compiling loop.c		
real	2.73	6.65
user	0.75	0.95
sys	1.1	1.4
Compiling pipes.c		
real	3.01	6.62
user	1.11	1.33
sys	1.11	1.44
Compiling scall.c		
real	2.63	5.73
user	0.67	0.92
sys	1.07	1.34
Compiling sieve.c		
real	3.1	6.74
user	1.18	1.43
sys	1.09	1.45

Listing 1: dwrite.c

```

/*
Program to create and write a disk file from
the BYTE benchmarks

Compile: cc -O -s -o dwrite dwrite.c

Run: /bin/time dwrite

Notes: elapsed time is the significant measure
*/
#include <stdio.h>
#define BLOCKS 256

main()
{
    char buffer[512];

    char *filename = "a_large_file";

    register int i;

    int fildes;

    if ((fildes = creat(filename, 0640)) < 0)
    {
        printf("Cannot create file\n");
        exit(1);
    }
    else
    {
        close(fildes);

        if ((fildes = open(filename, 1)) < 0)
        {
            printf("Cannot open file\n");
            exit(1);
        }

        for (i = 0; i < BLOCKS; i++)

            if (write(fildes, buffer, 512) < 0)
            {
                printf("Error writing block
                %d\n", i);
                exit(1);
            }

        close(fildes);
    }
}

```

Listing 2: dread.c

```

/*
program to read randomly from the file
created by dwrite
another BYTE benchmark program

Compile: cc -DSIXTEEN -O -s -o dread dread.c
for machines with rand() in the 2^15 range

```

```

or
cc -DTHIRTYTWO -O -s -o dread dread.c
for machines with rand() in the 2^32 range

```

Run: /bin/time dread

Notes: Again, elapsed time is significant

```

*/
#include <stdio.h>

#define BLOCKS 256

long lseek();

main()
{
    char buffer[512];

    char *filename = "a_large_file";

    register int i;

    int fildes;

    long int offset;

    if ((fildes = open(filename, 0)) < 0)
    {
        printf("Cannot find %s. Run
        dwrite first.\n", filename);
        exit(1);
    }

    for (i = 0; i < BLOCKS; i++)
    {
        #ifdef SIXTEEN
            offset = (long)rand() * 4L;
        #endif
        #ifdef THIRTYTWO
            offset = (long)rand() / 16384L;
        #endif

        if (lseek(fildes, offset, 0) < 0L)
        {
            printf("Lseek to %ld failed, i
            = %d\n",
            offset, i);
            exit(1);
        }

        if (read(fildes, buffer, 512) < 0)
        {
            printf("Error reading block at
            byte %ld\n",
            offset);
            exit(1);
        }

        unlink(filename);
    }
}

```

Listing 3: fcalle.c

```

/* Function call program from BYTE
Compile: cc -O -DEMPTY -s -o fcalle fcalle.c
and      cc -O -DASSIGN -s -o fcalla fcall.c

```

Run: /bin/time fcalle
/bin/time fcalla

Notes:
difference in user times (between fcalle & fcalla?) in seconds will be a measure of function call efficiency.

```

*/

#define TIMES 50000

main()
{
    #ifdef EMPTY
    {
        register unsigned int i;

        for (i = 0; i < TIMES; i++)
    }
    #endif
}

```


IBM PC/XT/AT COMPATIBLES

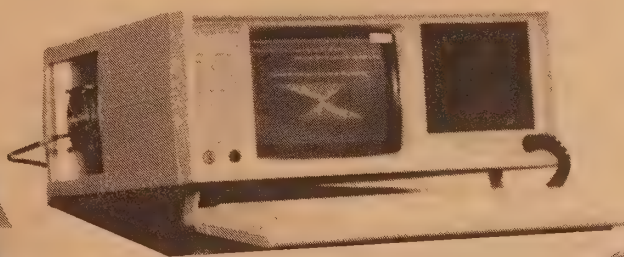
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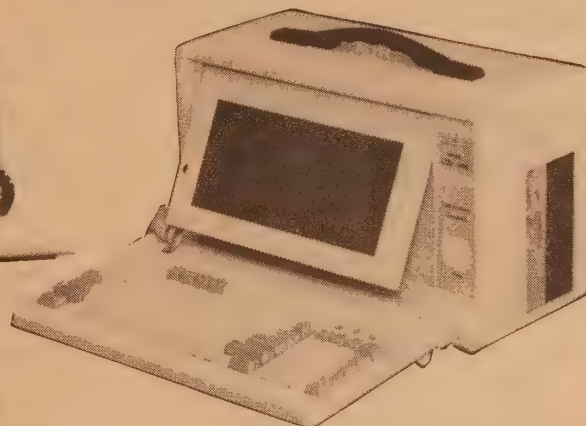
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```

    i = empty(i);
}

empty(k)
register unsigned int k;
{
    return(k);
}
#endif

#ifdef ASSIGN
{
    register unsigned int i, j;

    for (i = 0; i<TIMES; i++)
        j = i;
}
#endif

```

Listing 4: loop.c

a program to test looping and incrementing.
 >From the *BYTE* benchmarks, based on a program from *USENET*

compile: cc -O -s -o loop loop.c

run: /bin/time loop

notes: a historical curiosity according to *BYTE*; is i++ an INCR instruction or an ADD instructions?

```

*/

main()
{
    long i;

    for (i = 0; i<1000000; i++)
        ;

    printf("Done\n");
}

```

Listing 5: pipes.c

/*
 pipes.c from *BYTE*

Compile: cc -O -s -o pipes pipes.c

Run: /bin/time pipes
 */

#define BLOCKS 1024

/* buffer */
 char buffer[512];

/* file descriptor for pipe */
 int fid[2];

```

main()
{
    register int i;
    pipe(fid);

    if (fork())
    {
        for (i = 0; i<BLOCKS; i++)

            if (write(fid[1], buffer, 512)<0)
                /* There's an error */
                printf("Error in writing: i = %d\n", i);

            /* Close pipe when finished */
            if (close(fid[1]) != 0)
                printf("Error in parent closing\n");
    }
    else
    {
        /* close since we're not writing */
        if (close(fid[1]) != 0)
            printf("Error in child closing\n");
    }
}

```

```

        for (;;)
            if (read(fid[0], buffer, 512)
                == 0)
            {
                break;
            }
    }
}

```

Listing 6: scall.c

/* The "system call" benchmark program from *BYTE*
 Compile: cc -O -s -o scall scall.c
 Run: /bin/time scall
 Notes: Elapsed time is the interesting thing returned

```

*/
#define TIMES 25000
main()
{
    register int i;

    for (i = 0; i<TIMES; i++)
        getpid();
}

```

Listing 7: sieve.c

/* Eratosthenes Sieve Prime-Number Program from *BYTE*
 January 1983
 */

```

#define TRUE 1
#define FALSE 0
#define size 8190

char flags[size+1];

main()
{
    int i, prime, k, count, iter;
    printf("100 iterations\n");
    for (iter = 1; iter <= 100; iter++)
    {
        count = 0;
        for (i = 0; i <= size; i++)
            flags[i] = TRUE;

        for (i = 0; i <= size; i++)
        {
            if (flags[i])
            {
                prime = i + i + 3;
                /* printf("\n%d", prime); */

                for (k = i + prime; k <= size; k += prime)
                    flags[k] = FALSE;
                count++;
            }
        }
        printf("%d primes.\n", count);
    }
}

```

Listing 8a: multi.sh

```

: /bin/time /bin/sh multi.sh 1 2 3
: run with process from 1 to 6
for i
do
    echo $i;
    /bin/sh tst.sh &
done
wait

```

Listing 8b: tst.sh
 sort > sort.\$\$ << /* EOF
 Now
 is
 the

```

time
for
all
good
men
to
come
to
the
aid
of
their
country
/* EOF
od sort.$$ | sort -n +1 > od.$$
grep the sort.$$ | tee grep.$$ | wc > wc.$$
rm sort.$$ grep.$$ od.$$ wc.$$

```

Listing 9a: run_run

```

for i in 0 1 2 3 4 5 6 7 8 9
do
    rm dread dwrite fcalle fcalla loop pipes
    scall sieve
    ./run_bench.sh 1>'uname-'. $i2>&1

```

Listing 9b:

```

: sh script to compile and run BYTE UNIX benchmarks
:
echo "Compiling dwrite.c"
/bin/time cc -O -s -o dwrite dwrite.c
echo "Compiling dread.c"
/bin/time cc -O -DTHIRTYTWO -s -o dread dread.c
echo "Compiling fcalle.c"
/bin/time cc -O -DEMPTY -s -o fcallc fcallc.c
echo "Compiling fcalla.c"
/bin/time cc -O -DASSIGN -s -o fcalla fcalla.c
echo "Compiling loop.c"
/bin/time cc -O -s -o loop loop.c
echo "Compiling pipes.c"
/bin/time cc -O -s -o pipes pipes.c
echo "Compiling scall.c"
/bin/time cc -O -s -o scall scall.c
echo "Compiling sieve.c"
/bin/time cc -O -s -o sieve sieve.c

```

: Now execute the tests

```

echo "Executing dwrite"
/bin/time ./dwrite
echo "Executing dread"
/bin/time ./dread
echo "Executing fcalle"
/bin/time ./fcalle
echo "Executing fcalla"
/bin/time ./fcalla
echo "Executing loop"
/bin/time ./loop
echo "Executing pipes"
/bin/time ./pipes
echo "Executing scall"
/bin/time ./scall
echo "Executing sieve"
/bin/time ./sieve
: multiple shells:

echo "Shell 1"
/bin/time /bin/sh multi.sh 1
echo "Shell 2"
/bin/time /bin/sh multi.sh 1 2
echo "Shell 3"
/bin/time /bin/sh multi.sh 1 2 3
echo "Shell 4"
/bin/time /bin/sh multi.sh 1 2 3 4
echo "Shell 5"
/bin/time /bin/sh multi.sh 1 2 3 4 5
echo "Shell 6"
/bin/time /bin/sh multi.sh 1 2 3 4 5 6

```


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- Monitor

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Mono: **\$1245**

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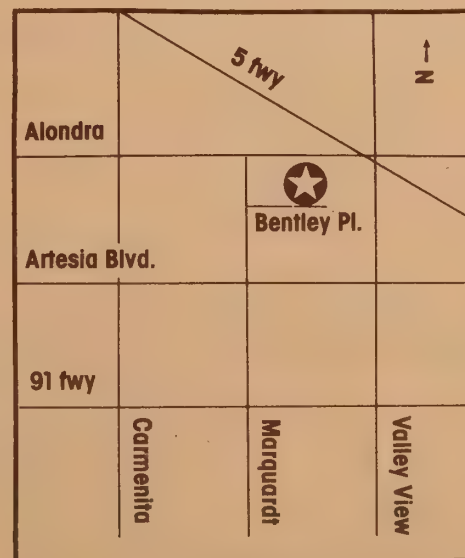
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New Trends For Atari *Federated And The Mega*

By Helmi Kobler

Atari's made a name for itself by providing powerful, low cost computer equipment over the last two years. Now it looks like the company may be trying to repeat that success in the consumer electronics market. Can you imagine owning a stereo, VCR or even a television with the Atari label?

Electronics equipment like that may be a year or two down the line, but signs indicate that it's on its way. The obvious sign is Atari's purchase of The Federated Group, an electronics retail

According to Atari chairman Jack Tramiel, the Federated purchase is a key element in Atari's new attempt to recapture the consumer electronics market from the Japanese. "There are no consumer electronics companies today in the United States," he said. "We need to rebuild that, and I think we can do it."

chain made up of 67 stores throughout California, Texas, Arizona, Kansas and New Mexico.

These stores are typically huge acre-sized barns that stock everything from answering machines to audio and video equipment to personal computers. But what could retail electronic stores have to do with a computer company? According to Jack Tramiel, Atari's chairman, they're a key element in Atari's new attempt to recapture the consumer electronics market from the Japanese! "There are no consumer electronics companies today in the United States," he said, referring to the likes of General Electric, which dropped out of the market a while ago. "We need to rebuild that, and I think we can do it."

Tramiel, though, has not said exactly what he

intends to fight the Japanese with, but suggested an upcoming line of electronics products that will be sold through the Federated chain, giving them immediate distribution in certain parts of the country. People are guessing, though, that one Atari product waiting in the wings may be the compact disk player it's been talking about since 1985. It won't be limited to CD-ROM applications, but will also be able to play the audio CD disks you find in record stores. Audio CD players are selling for as low as \$150; if Atari's can approach that low price, it may wind up a hit in both the computer and music worlds (assuming, of course, that Atari can get it out the door. The CD disk player is nearly two years tardy).

It's a little unclear if Atari's purchase of Federated may also be designed to strengthen distribution of the 520 and 1040 STs in the U.S. Jack Tramiel has denied this, but Gregory Pratt, Atari's chief financial officer, said "We made the purchase principally to add distribution for our retail computer line."

Then there's the premise that Atari bought Federated because it's a potential money-maker. It grossed \$429.9 million in the last fiscal year (Atari's revenues were \$258 million) but was nonetheless in the red. If Atari can make Federated profitable again, and there should be no doubt that it will, then it'll mean more money in the ol' purse for Atari.

In any or all cases, though, there's one thing about the Federated purchase that we can all agree on: Commodore can certainly cancel its plans to sell the Amiga 500 and 2000 through the Federated chain. That's for sure.

News On The Mega

Some news on Atari's Mega STs — they've recently undergone a slight name change. Atari has dropped the "ST" identifier and is now simply calling the machines the Mega 2 and Mega 4. You might construe this as part of Atari's effort to market the Megs as "business" machines, instead of mainly home/small business computers, as the 520 and 1040 are typically perceived.

The Megs' new list prices are also clearly intended for the professional market. While Atari had originally announced the four megabyte monochrome Mega as listing for around \$1700, that price has been boosted to \$2399, with a color system at \$2599! The Mega 2 seems to have taken the Mega 4's place at \$1699 for a monochrome system and \$1899 with color.

Finally, Atari is making sure that the Megs are distributed separately from the STs. All 520 and 1040 dealers have had to re-apply for Mega dealership. This is to insure that the top-of-the-line Megs are not sold in any stores that don't convey the right business image.

Atari is concerned with its Mega dealers' ability to provide after-purchase support and service. Another criterion is that a Mega dealer must have an outbound sales force that, operating outside the store, approaches the business community with the "Mega solution."

Image isn't all there is to being a Mega dealer, though. Atari is concerned with its Mega dealers' ability to provide after-purchase support and service. Another criterion is that a Mega dealer must have an outbound sales force that, operating outside the store, approaches the business community with the "Mega solution."

The Mega philosophy is new to just about everybody who has had anything to do with Atari since the 520 was released in '85. For Atari, it means selling a computer that doesn't compete in the low-end market but instead with the likes of Apple's Macintosh and IBM AT clones — a first for the Tramiels, I think. For the Atari dealer, it means adopting new policies to avoid being locked out of a new generation of machines. For the Atari ST user, it means the opportunity to step up to a more advanced, professional machine, but at a cost of well over \$1000.

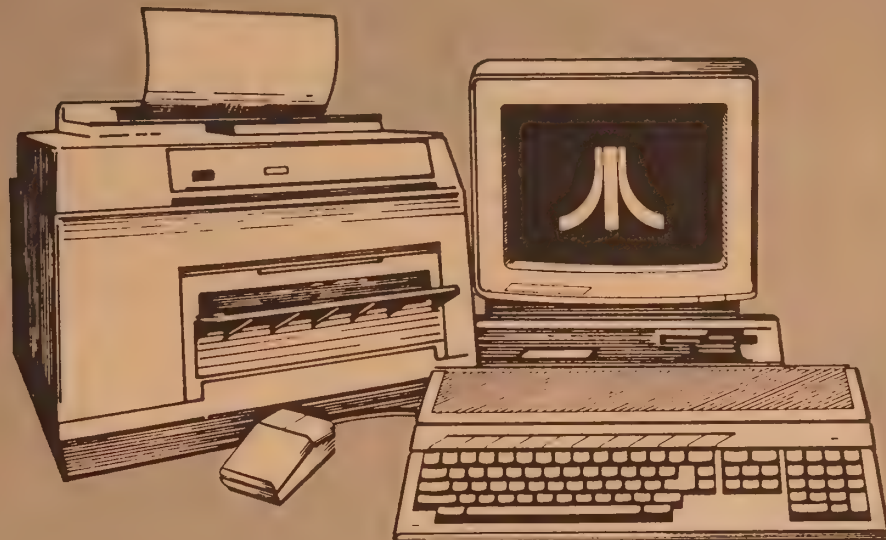
The obvious question is whether the Mega will survive after breaking all the conventions of the Atari world. Will buyers be interested in paying for a Mega when the same dollars will buy a Macintosh Plus or SE? Will enough professional software be developed for the Mega to persuade businesses and professionals into buying Atari instead of IBM or Apple? Will Atari, in being so selective with its Mega dealers, actually recruit enough to sell the new machines in large volume?

In taking Atari and the ST into new markets, the Mega invites deep analysis. Pretty soon, though, whatever questions exist regarding the Megs' performance will be answered. Atari has begun shipping the Megs in Europe and has sent a few machines to the press and some developers in the U.S. They should hit the shelves here before November ... I hope. □

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CP/M

Telecommunications Programs In CP/M

By Robert D. Athey Jr.

Before we start in on the phone/modem computer connection and communications programs, it's mail time again. I get letters — letters from Europe! A computer club in Poland is looking for aid in the form of newer computers or money or even pen pals. They have two Timex 2048's and an Atari 800XL, but no disk drive or printer. They do programming in C, BASIC, PASCAL, and FORTRAN, as well as Z-80, 8080 and 8086 assembly languages. Write Z. Dziekonski, 82-200 Malbork, Osiedle XX-lecia PRL 18A/2, Poland.

As I have been advocating the user groups, a letter from ACUTE (American Computer Users Temporarily in Europe) gave me quite a chuckle. They need catalogs of software and demo disks, including those on MS-DOS systems, as they are a multibrand club. Write to: ACUTE, Postfach 4, D-8818 Lehrberg, West Germany.

Speaking of the European connection, a conversation with Guy Romano, the CP/M help person I recommended recently, gave me insight into the need for computer help in Europe. He knows 17(!) languages (not counting computer languages) and he needs them as he answers calls for help from all over the world. His emphasis is on the T1 99-4A and the DEC Rainbow. He also shows up occasionally on the local RBBSs as a contributing caller. He does not run an RBBS of his own, but can be reached at (415) 753-5581. He answers letters within 24 hours. You can write him at 116 Carl St., San Francisco, CA 94117. He has been acting as an information clearinghouse, with help for computer users, for eight years. In addition to his technical expertise, he is an artist (Ph.D. in Fine Arts from a European university) as well as an empath to the user.

COMMUNICATIONS WITH CP/M

The use of the computer to communicate over telephone lines is a great advance in many ways. You can not only send text or numbers, but also programs or libraries of programs and documentation. I found the electronic bulletin boards a complete social milieu, varying from the chatty high school gang to the college student escaping the grind of a mechanical engineering curriculum to the artists and engineers of the workaday world and the retiree in a new element. It offers a broad range of entertainment, politics, philosophy and instruction (especially from the traders of information on how to use these electronic "idiot savants" we call computers).

For the new user, it's a great way to find help. There are a great many experienced users out there who delight in telling you how to reconfigure your printer through electronic commands. They have whole reams of information on how to "patch" your WordStar or other program to make it usable or useful (or even to make the

unworkable work). I depend heavily on Ken Fowler, Bond Shands, Dick Ezzard and Woody McPheeters to get me through the new and unfamiliar.

There are many programs around to help you operate a modem and handle the chores needed to transfer data across the telephone line. I use MDM740, an older program constructed by Irv Hoff, because it is relatively simple to use and has the transmission and capture capabilities I need. More powerful programs (like IMP, MEX., KERMIT and others) are yet more complex, and I haven't taken the time to figure them out. However, they have advantages over the simpler MDM740.

The MDM740 program comes with a second, and even simpler, program called M7LIB.COM that constructs the list of telephone numbers used in the MDM740 program. The M7LIB program opens up the MDM740.COM program to insert the numbers you want to add, or to delete the numbers you no longer use. To make these changes, you type in "M7LIB MDM740.COM" and the program shows you the list it finds in MDM740 with a query "Does this look correct?" You type in "Y" for yes to continue. It then puts the same list on the screen, with the commands on the bottom line.

The command set is really simple in M7LIB. The print command will print the list on your printer, which is very handy. The save command terminates the program after any changes have been inserted into MDM740. The toughest command is the change command, where you have to insert the label and number with at least one period preceding the number. I have the "1170" preceding any number I use in the daytime, to make sure the call waiting feature is turned off. I hear call waiting is a terror for people operating RBBSs. The "bomb out" disconnection you get from incoming calls on call waiting can do strange things to the RBBS software on occasion.

Using MDM740 is also easy. Just type in "MDM740," and you'll get the opening screen. My first move is to get the system to 1200 baud with the "SET" command, as shown in that same figure. You can find out what other settings are embedded in the program by typing a "?". The extended command list rolls up as three screens.

The most useful commands for me are the "DIR" command showing the directory of any disk drive you designate, the "T" command to get out of the computer and into the modem, and the "CPM" command to quit and go back to the operating system "A>" prompt. The "T" command will allow you to keyboard directly to your modem, if it is a "smart" modem, so you can change settings (baud rate, line feeds, parity, etc.). Some modems will allow you to call directly from them, rather than from the MDM740 program, and you can make other changes in the modem, too.

Another use of the MDM740 "T" command is to set up a capture buffer on a disk with the

lowers you to capture any text or messages you read on an RBBS by using the <CONTROL>Y to open the buffer while you are connected to the RBBS. The program will show the text being captured by having a semicolon in the left-most column on the screen as the text rolls past. The buffer will start to load up the file on disk, after it exceeds 16K, and you have to make sure the disk has enough room for the file. Indeed, you'll sometimes capture a file of 75K if you aren't watching, and then what will you do with it? I edit such captured files, and only print those portions I'll use later. (I always captured the games I participated in on House of Games, but I have no time for those lately. Sorry, Ksnarlisk.) The capture can be turned off by a <CONTROL>R.

You can escape to the MDM740 program from the modem (while connected to an RBBS or not) by using the <CONTROL>E command. While connected to an RBBS, a great way to check the directory of the disk, is by using the MDM740 "DIR" command. This way you can make sure that the file name is exactly the way you want it before you send it.

The easiest way to send a file while connected to an RBBS is the <CONTROL>T command. You will be offered an option as to whether you want time delays between letters or not. You'll need the time delays for some RBBSs but not for others. For instance, BAKUP at (415) 849-9389 receives garbage without the time delays. If you can get away without using them, the time savings are considerable. 1200 baud with time delay seems slower than 300 baud without it.

One feature of MDM740 I like is its support of XMODEM or Christensen protocols. That means the RBBSs that use a program called XMODEM can zip files to you faster and vice versa. This requires that you give the XMODEM set of commands while connected to the RBBS, and then get immediately into MDM740 with the <CONTROL>E command. You then use the "R" or "S" signal with the filename to get the transfer going, for example, use "R BAKUP.LST" to receive a list from the BAKUP RBBS. This file will be received directly onto the disk. The reason this transfer is so much faster is that 128 bytes are sent at a time, instead of one letter at a time. My friends tell me I am missing out, as the newer programs shoot 1000 bytes at a time. I don't do that much in the way of transfers, and the ones I do are small. As I said, I'll stay with MDM740.

I set aside an hour or two a week to try some modeming. I catch up on the news of BAKUP, and occasionally get onto another RBBS. The KAYFOG board by Bond Shands is very conversational in tone, and there are others like it around, too. Some of the feedback I get on the columns is on the RBBSs, though most of it is along other lines. I don't do as much gaming by modem as I did in past years, as I don't have the time available. I did enjoy House of Games and POPnet, however. I have MDM740 and M7LIB on both my '82 Kaypro II and the ON!, and they work out well with both. □

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Info About.info Files

By Matthew Leeds

The Xerox Star started it, and the Mac popularized it. Graphical interfaces using a mouse, menus, and icons are showing up everywhere. The Amiga's graphical interface is known as the Workbench. It offers a standard user interface for applications, an easy-to-learn interface for users, and a great deal of hidden power and potential. To tap into some of that potential, it's important to learn something about how the Workbench works.

The key to using the Workbench is found in the icons displayed on its screen. Each of these icons is linked to a file, usually either a data file or application. Other icons represent the Trashcan (a unique application), subdirectories (or drawers), and disks. I'll examine each type of icon in turn.

Disk icons in many ways are the simplest. They represent a storage medium: floppy or hard disk, or RAM. Double clicking on a disk icon will open a window displaying any icons in the root directory of a disk. You can get additional information about a particular disk by single clicking on its icon, and then using the INFO command in the Workbench menu. This will call an application known as INFO and then examine the Disk.info file for additional data. You will see displayed the number of free bytes and blocks on the disk and its current status (read only, read/write). I'll go into more detail regarding the INFO command later. You can use a disk icon to make a copy of a disk by dragging the disk icon onto the disk icon of the disk you want to copy to. You cannot place a disk icon inside of any other window—it must reside on the Workbench screen.

The Trashcan icon is also a simple icon. It cannot be moved from the window it resides in, which is the window that opens when you first click on a disk icon. It is possible to move it using the CLI, but that's another matter. What's important to remember is that the Trashcan icon is a unique type of icon.

Drawer icons are connected to subdirectories. When you double click on a drawer icon, a new window opens and any files in that subdirectory with associated icons will be displayed. You can nest drawer icons inside other drawer icons, and moving a drawer icon moves all of the files contained in the associated subdirectory. You can also use this to copy entire subdirectories from one disk to another by moving the drawer from one disk window to another.

There are two other icon types: project icons that represent data files and tool icons that represent application files. These two icon types are the most common and the most useful. With

just a basic understanding of how they work you can gain a great deal of control over your Amiga (down, sit, roll over).

Not all files will have icons associated with them. You can see this by opening a CLI window and calling a directory of any disk. You will notice some files seem to have duplicates with a .inf appended to them. These are the icons associated with a file. For some files there is no need to have an icon; for example, printer drivers have no icons, nor do font files. Since these are data files, you would not normally have a need to call them from the Workbench.

There are many instances in which you will want to have access to data files from the

window will show the filetype for the datafile.

The default tool window lets you set the path to an application, and what application a project will call. Most applications that create icons for their data files expect to be located in a particular directory, and if you move them their data file cannot find them. This is what occurs when you click on a project icon and either nothing occurs or the screen flashes. If you know where the application is, you can use the INFO command to change the default tool or path for a project. One example of this is Flow, which expects that you will always boot projects from a disk called Flow. By changing the default tool in the Flow project icon you can get around this minor problem.

For some applications no default tool type is set. You can still use the project icon to load both the application and the data by single clicking on the project icon, holding down the shift key and double clicking on the tool icon.

You can make duplicates of any file and its associated icon by single clicking on the icon and using the duplicate command from the Workbench menu. This will produce a copy named "copy of ...". To change the name of the copy, single click on its icon and use the rename command in the Workbench menu. This will bring up a single line window with the current name inside. Make your changes and just press return. You can rename any icon type in this fashion.

At some point you may want to customize some of the icons you use. You can edit existing icons to new icons or create new ones from scratch. Commodore provides the IconEd program in the System drawer of your Workbench disk. An excellent tutorial on its use can be found in the 1987 Special Issue of AmigaWorld. For those of you with the 1.2 Extras disk there is also a program called IconMerge that lets you create "animated" icons, icons that change shape when you click on them.

If you are interested in creating your own icons, I recommend you also consider several programs that are available from public domain libraries, such as the Fish Disk series. The Brush2Icon program will convert an IFF brush to an icon. This lets you use programs like Deluxe Paint to create icons. IconType will let you change an icon's type, which is very important as there are limitations in editing existing icons; you cannot save an edited icon as other than its original type. IconMaker will make icons for files that do not have icons.

I should also mention that Pete Goodeve has released a new version of his shareware program Xicon 2.0. This is a remarkable utility that lets you create icons that execute script files, execute CLI commands, display text files, and a whole host of other functions. This is a must-have for anyone who hacks around in Workbench, needs CLI commands and hates to call CLI.□

**At some point you
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the icons you use.
You can edit existing
icons or create new
ones from scratch.**

Workbench, and this is where the project icon type comes in handy. You can call an application when you double click on the project icon. A prime example of this is clicking on a notepad file icon. This loads the notepad application and then loads the notepad data file. You might ask, how does this happen? Well, fire up your Amiga and follow along.

Single click on a notepad data file and then use the INFO command from the Workbench menu (it's the one on the left). The window that opens will contain quite a bit of information. At the top you will see the name of the icon you've selected. Below that you will see the icon type and size of the file in bytes and blocks. There is also a window labeled "stack". This is normally left at 0000 for project icons. The file status is shown to the right.

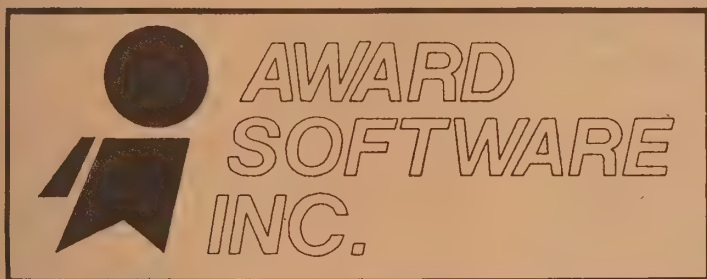
Below are three small windows; comment, default tool, and tool types. The comment window is the file note attached to the file, and most likely is blank. You can add a comment, if you like, by clicking in the window and typing your comment. The default tool window will show the path to the notepad application and the tool types

Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields. He currently works for Infinity Software.

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TELECOMMUNICATIONS

Anti-Terror Net

By Brock N. Meeks

You are the security manager of a large multinational company. Your job is to coordinate the movement of key company personnel through a geopolitical mine-field of terrorism and treachery.

The presence of these key personnel around the world is vital to the stability and future profitability of the company. Yet, should any of these personnel be taken hostage or worse, the monetary ramifications could be crippling, the company's world reputation irreversibly damaged. Safety, therefore, is foremost in your mind.

How do you assess the risks involved in moving these personnel around, while assuring their safety? Certainly reading the impotent news wires of the Associated Press et al. isn't going to give you enough information.

Just then your eyes focus on a small discreet ad in *The Wall Street Journal*. You smile. Strains of the Mission: Impossible theme drift through your cortex; you casually look over your shoulder for Peter Graves.

The *Journal* ad is for a company with the sterile-sounding name of Ackerman & Palumbo Inc., of Miami Beach. The ad copy mentions a service that is "an analysis of terrorism and political stability risk in 75 countries, updated continually every business day and accessible electronically by personal computer. Subscription limited to end user companies." "Risknet," you say out loud. "Catchy name." You reach for the phone.

TERRORISM VS. SAFETY

The voice on the other end of the phone is cautious. The sentences are deliberate. E.C. (Mike) Ackerman keeps erasing his words. Verbally backspacing.

"The focus (of Risknet) is on the safety of American corporate personnel. Overseas. Or multinational corporate personnel overseas.

"It's terrorism risks and stability risks. Basically the day-to-day focus is on the safety of personnel."

Mike Ackerman is a principal of Ackerman & Palumbo Inc. Risknet is a product of his 10-year-old company. You ask about his background and that of partner Louis Palumbo.

Both are former spies. More polite: former CIA agents. Ackerman says he left the CIA in 1975 (after 11 years with the agency) "to protest the sensation-seeking congressional investigation of the agency, as well as to plead for the preservation of an American intelligence capability." Palumbo, it turns out, was with the CIA for 22 years; he specialized in CIA personnel protection overseas.

Ackerman was an operations officer responsible for handling human resources, or the recruiting of locals, for the agency's use against the Soviet Union in Latin America and Africa.

Impressive credentials, you think, but you'd

hardly risk your job and the necks of corporate personnel on their reputations. Just how does Risknet get its information?

Risknet is fed information from a 25-member staff that consists of former State Department personnel, ex-CIA operatives, and retired security officers. "Basically, the staff consists of people I've known that are leaving the agency, or people leaving the agency that know our company," says Ackerman. Ackerman says Risknet also employs the services of a host of "stringers." These freelancers are often journalists covering terrorism in the field and academics who specialize in studying terrorism.

Reports on terrorist activity are fed daily into the Risknet database, which is maintained on Macintosh computers. Ackerman says that most reports are phoned in, "but we expect to have more people uploading their reports online in the near future."

Risknet's staff analyzes these reports and then makes forecasts regarding possible terrorist activity. They also track trends in the world's "hot spots," such as Beirut, and recommend a course of action should any of their clients have to travel in these areas.

Using your other phone line, you dial up a sample of Risknet's offerings. Online you see two broad categories: an executive digest and 75 country reports.

Looking over the executive digest, you see it provides an overview of the world's terrorist activities and provides a summary of possible reactions. For example, in the aftermath of the bloodshed in Mecca, Risknet notes that prime targets of the Shia terrorists would be U.S. and French diplomats. The report goes on to suggest that multinational contractors tighten up bomb-control measures.

Country reports track the stability of the host governments and analyze the future political climate. In the Panama report, for example, Risknet reports on an opposition party rally and the government's likely response (a counter-demonstration). This counter-demonstration, Risknet suggests, carries a risk of vandalism against U.S. multinational properties "despite assurances to the contrary." The report names names and provides background on past activities of the named military and government officials.

"I could get the same information by simply monitoring the news wires," you tell Ackerman. He quickly points to the fact that his company ties several unrelated events together and puts them into perspective. He says that many terrorist activities go unreported by the American press, but Risknet, because of its in-country staff, provides this information in its reports. "We don't just report events, we analyze," he says.

To illustrate this point, Ackerman reminds you of Risknet's advisory that warned Americans to evacuate Iran. That September 1978 report was made a full five months before the overthrow of the Shah's government. "People didn't listen

and had to use extreme measures to rescue their personnel," he says.

ONLINE ACCESS

You learn that Risknet is available on the General Electric Information Services Co. (GEISCO) packet-switched network. "We choose the GEISCO network because it's available from 26 different countries," Ackerman says. "We update the database continually as reports come in."

Ackerman declines to name specific clients. However, he does say that "we service 80 of the Fortune 100 companies and 175 of the Fortune 300."

"The company started out as a hard copy forecasting service," Ackerman says. "Then we moved to telex and FAX delivery." He notes that his company is phasing out both of these services in favor of online access. "The online access is the ultimate, obviously. It's really put the FAX and telex out of practical use. The only resistance we're getting is from people that are afraid of computers. Other than that, the acceptance of the online system has been fantastic."

Time to talk nuts and bolts. "How much do we have to pony up for this service?" you ask.

"Payment is up-front," says Ackerman. "Can pay between \$4,000 and \$6,000, depending on how much hard copy delivery your company wants." Risknet charges 75 cents a minute for U.S. access and \$1.25 for access outside of the U.S. There is also a quarterly travel report available in hard copy for \$1,250.

SIDE SERVICES

Ackerman & Palumbo Inc., also assists in hostage recoveries and does security training for company personnel. Ackerman says the Chubb Corporation, an insurance company, has his company on retainer as a consultant in kidnapping cases. In addition, Risknet is planning a Japanese-language version of Risknet.

"We have several foreign clients, but right now they are accessing the information in English. To make the service more marketable, we're thinking of several foreign language versions, the first being Japanese," says Ackerman. "The technical difficulties (of providing a Japanese version) are surprisingly few." Ackerman gives the Macintosh credit for the smooth technical transition.

WHO'S WHO

It sounds like Risknet has an impeccable client base; Risknet carefully screens its clients. "Our users are household names," says Ackerman. Individuals aren't given access, "and we wouldn't sell to, say, a travel agency." And then he adds: "We also don't sell to other governments. That's a big no-no."

You ask Ackerman if his former employer has expressed any interest in Risknet.

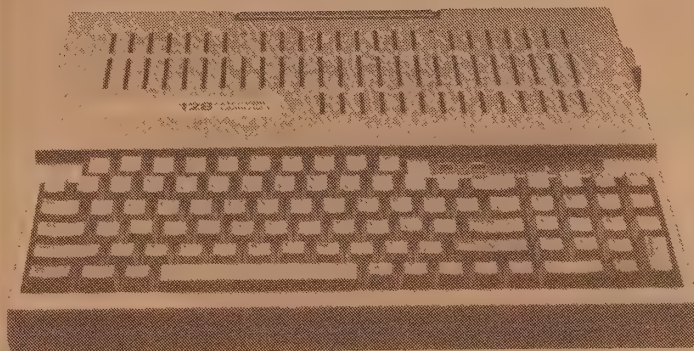
"Hopefully they have their own networks," is all he says. (Ackerman & Palumbo, Inc., 1666 Kennedy Causeway, Miami Beach, FL 33141, 305/865-0073.) □

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APPLE II

The Laser 128EX *A Look At An Apple II Compatible*

By Mark Markowitz

Almost anyone can make money turning out a PC clone, but only Video Technology of Hong Kong and Northbrook, Illinois, has managed to overcome formidable legal and engineering problems to successfully clone the immortal Apple II. And only Central Point Software, of Portland, Oregon can manage to sell it so cheaply at \$579.

The original Laser 128, introduced about two years ago, was a remarkable value. In a package slightly larger than the Apple IIc, and at about half the price, it added a parallel printer port, an RGB video connector and one rather awkward side-mounted slot. Software compatibility grew from good to excellent, thanks to a series of ROM chip upgrades offered to owners at a nominal cost of \$25.

The machine was ruggedly built and professionally supported. (Poor product support killed Franklin Computer Company's bid to recapture a share of the Apple clone market.) The Laser 128 also survived legal battles with both Apple Computer, Inc. and Franklin Computer Company over alleged copyright infringements.

The only complaints you ever heard about the Laser were:

1. It's ugly, and
2. The keyboard stinks.

Molded in battleship gray, the boxy, utilitarian case of the Laser lacked the sleek, stylish cuteness of the IIc. On your desktop the Laser looked particularly hideous when accompanied by its expansion box, a tilted sheet metal casket that doubled the slot capacity for about \$60. The Laser keyboard offered a numeric keypad, and ten marginally useful function keys (duplicating common control-key combinations), but the feel of the keys was hollow and "clackety." The spacebar sometimes stuck and the key labels tended to wear off on heavily-used letters.

The new Laser 128EX corrects some of these faults, and adds a bunch of new features. The price/performance ratio is outstanding.

The current Laser 128 firmware (ROM version 4.1) is highly compatible with Apple II software. A fact sheet lists over 700 popular titles that have been tested for compatibility. I could not find anything that would not run on the 128EX. Apparently, a few old games use a copy-protection scheme that will not boot on the Laser, but that is not much of a loss. For most users, the only significant hardware incompatibility is the lack of a 16-pin joystick port on the motherboard. Like the Apple IIc, the Laser has a 9-pin connec-

tor for either a mouse or a joystick. The Apple mechanical mouse and the Mouse Systems optical mouse both worked fine on the Laser.

The case has been completely redesigned, with rounded corners and bold, diagonal cooling slots. It measures 15 inches wide, 13 inches deep and three inches thick. A tilt stand doubles as a carrying handle. The keyboard is quieter and the keycaps are more sculptured, but the "feel" is not nearly as good as that of the Apple IIe keyboard. One thing that has not changed is the designer's meticulous attention to shielding against radio frequency interference. This is one computer that will not upset your television reception.

Under the hood, the 65C02 microprocessor has been turbocharged with a built-in accelerator that boosts the normal 1 MHz clock rate to as much as 3.6 MHz. (An equivalent accelerator board for the IIe would cost over \$200 extra.) Using the accelerator is extremely simple: hold down the "2" key while booting, and the system will run at 2.3 MHz. Hold down the "3" key and it will run at 3.6 MHz (faster than the Apple IIc, which clocks in at 2.8 MHz). The default speed is the normal 1 MHz, which some software requires to operate correctly.

The new Laser has also swallowed Central Point's Universal Disk Controller, which allows an inexpensive 3.5" microfloppy drive to plug directly into the external drive port. "Inexpensive" here means \$225 for a double-sided 800K drive, which is significantly less than Apple demands for a Unidisk and controller card.

The designers have also managed to shoehorn a full one-megabyte RAM card into this little package. AppleWorks (version 2.0) recognized this expanded memory with no hesitation and loaded itself right in. On our evaluation unit this RAM board was fully populated, but most buyers will have to open up the computer and add their own chips (a task that is only scary the first time...).

A small metal door on the bottom of the case provides access to the ROM chip and a bank of three DIP switches. One switch flips the power supply from 60 to 50 Hz (in case you ever travel to Europe with your computer).

The Laser 128EX handles its "slots" in an unusual way. One switch toggles "Slot 7" between "internal" and "external" modes. When the slot is internal, it assigns the external drive port to the Universal Disk Controller circuitry. This lets you plug a 3.5" drive directly into the computer. When the slot is "external" you can plug virtually any Apple II circuit card into the side slot of the Laser. The middle DIP switch controls "Slot 5." When this is "internal" the RAM card is enabled. When it is "external" you can use the second slot of the expansion box for almost anything.

The final documentation for the Laser 128EX was not available in time for this review. The original Laser 128 manual was a substantial softcover book with clear, simple explanations, complete pin-outs for all connectors and a detailed reference section on Microsoft BASIC (which is essentially identical to AppleSoft). Video Tech also publishes a Laser Technical Reference Manual, filled with the sort of information software developers need to avoid compatibility problems.

Central Point bundles *Copy II Plus*, an indispensable utility program, with the Laser 128EX. Even if you never intend to duplicate copy-protected software, *Copy II Plus* is worth owning. For example, it can initialize disks in either ProDOS or Apple DOS 3.3 formats, catalog the contents of a disk, and help recover "lost" data. If you do need to back up published software (for archival purposes only) *Copy II Plus* is updated several times a year to beat the latest wrinkles in copy protection.

Central Point also offers a complete line of cables (\$25 each) and color-coordinated accessories for the Laser 128EX, including external disk drives, a monitor, a mouse and a carrying case.

The Laser 128EX will start shipping about October 1. Central Point is offering an introductory price of \$499 (or \$80 off the list price) for an indeterminate period.

Although the 128EX is loaded with built-in features that would be costly add-ons if you bought an Apple, there are a few things this critic would like to see in the next version of the machine. A clock/calendar is at the top of the wish list. These things automatically time- and date-stamp your files (under ProDOS). What used to require a sizeable circuit card has now been reduced to little more than a chip, a capacitor and a lithium battery. A built-in graphics screen-dump (found on the competing Franklin Ace 500) would not cost much to add. A built-in track ball would provide all the functionality of a mouse, but without requiring any desk top space for a mouse pad.

The maker of an Apple clone has to offer the buyer a lot more than Apple does in order to make up for the lack of brand-name identity. For the great majority of potential Apple II school and home users, who do not yet need the advanced features of the Apple IIc, the Laser 128EX would be an excellent choice. They may encounter scorn and derision from owners of "real" Apple IIs, but they can laugh all the way to the bank. (Central Point Software, 9700 S.W. Capitol Highway, Suite 100, Portland, Oregon 97219. (503) 244-5782. Video Technology, 400 Anthony Trail, Northbrook, Illinois 60062. (800) 551-5742.) □

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In Praise Of Faithful Correspondents

By Mary Eisenhart

One of the industry's Great Performances is Acius' **Guy Kawasaki** demonstrating 4th Dimension. And, reports **Ruth Stever** of the **MacValley Users Group** in Beautiful Downtown Burbank, you can be among those witnessing this very event at MacValley's next meeting. The October general meeting will be held at 7:30 pm on Tuesday, October 20, the cafeteria of Burbank High School, which is located at the corner of Burbank Blvd. and Third St. in—yes, Burbank.

If you'd like more information about this particular meeting, or MacValley's other activities, you can write to P.O. Box 4297, Burbank, CA 91503, or call (818) 848-1277.

Fred Duffy of the **Original Apple Corps** user group in LA came by our booth at AppleFest to make sure we knew that his club, the first Apple user group, was celebrating its tenth anniversary. So now you all know . . . Happy Birthday, Fred et al., and many more. Those interested in the Apple Corps can call Fred at (213) 396-5515 for information.

Fred's a tireless advocate for his group; he first came up to our booth to sing the Corps' praises at the AppleFest in 1985, and has made a regular practice of doing so ever since. Fred's also somewhat unusual among our user group correspondents in that I've actually met him. There seem to be dozens of faithful souls out there who diligently keep us posted on the far-flung activities of usergroupdom. Ruth, for instance, sends us notices with commendable frequency, so as I go through the mail and read the latest MacValley missive, it's with a feeling of "Oh, I know you . . ."

So this month's column is devoted to some of these folks, without whom this column wouldn't exist, and the things they had to say for themselves this month.

First, from the extremely apologetic **Eric E. Hayes**, a note that, contrary to information he'd sent us, the **Musician's Network BBS** was not moving to (415) 893-5920, but rather to (415) 893-5471; he adds that the board's operating hours will be 6 pm to midnight until he gets a dedicated PC and modem. So if you've been having trouble reaching the Musician's Network lately, try the new number at the appointed time, phone number, and baud rate (300/1200), and your search should be rewarded. Settings are 7 data bits, even parity.

I love it when people correct erroneous information that quickly. And so does the luckless owner of 893-5920, probably. Thanks, Eric.

Jason Lin of Santa Monica, who's practically a charter member of the **MicroTimes** Correspondents, sends word that a change has come upon his board, the erstwhile **Wargames BBS**. Alas, the board's name seemed to provoke more trouble than it was worth — says Jason, "I had some confused hackers calling thinking that it is an illegal BBS."

But also, he adds, the board, which continues to operate at (213) 393-9777 under the name of Beta, has undergone a culture shift: "Another reason I'm changing the name is that the BBS now features articles for audio and videophiles. It has special emphasis on the latest news on the video technology. Other recent additions include movie and concert reviews and music news. **Beta RBBS** is not another downloading service, but a BBS that entertains with informative bulletins and lively discussions between audiophiles and videophiles."

Loyd A. Cribbs, another frequent communicator

with **MicroTimes**, has some news about the **San Francisco PC Users Group**. **Richard Couture** is the sysop of the group's new 24 hour BBS, which is the result of his donating 40 megabytes on his Compaq 386 for the club's use. The board's running at (415) 621-2609, 8-N-1, 300/1200/2400 baud; the board's open to the public for the first call, and subsequent calls require registration. Of course, if you're a member of SFPCUG, you get continual access.

Loyd adds that the club also has a 24-hour voice hotline at (415) 221-9166; a recorded message features the latest information on SFPCUG.

Rick Thrasher, who's been running a listing for his **Christian Macintosh User Group** in San Jose, reports that the group is now averaging five new members per month and meeting monthly on the first Thursday of the month in Santa Clara. The club welcomes Mac users from beginner to hacker level, and Rick invites you to call him if you'd like to know more: (408) 437-1913.

Moving to other business from first-time correspondents: the **City of Richmond** (CA, not VA) now has its own community bulletin board, which can be accessed at (415) 620-6500, 300/1200, 8-N-1. Public Information Officer **Paul Richardson**, who sent us this info, encourages you to call, and also points out that the board has limited operating hours from 6 pm to 6 am weekdays, and all day on weekends.

Called **Richmond OPUS**, the board was established to make city-related information available to the community outside of normal office hours. Information contained on the board includes Council, Commission and Board meetings, a roster of Council members, and announcements of special events and activities. Richmond OPUS also allows callers to leave messages for Council members and city staff.

Richmond OPUS is a six-month pilot project; after six months it'll be evaluated, and its continued existence depends on people using it. Therefore (hauling out editorial soapbox): *call this board*. Various governmental agencies, from **Assemblywoman Moore's** office to the **Berkeley Police Department**, are experimenting with this new medium, which gives unprecedented flexibility and convenience to those wishing to communicate with their legislators. Especially if you live in the affected communities and you'd like your voice to be heard, you owe it to yourself to support these early efforts. As the estimable **Scoop Nisker** has said more than once, "If you don't like the news, go out and make some of your own"—and dialing up your elected officials seems like a good place to start.

In other news, **Grant Rostig** of San Jose invites UNIX enthusiasts to check out the monthly meetings of the **Silicon Valley Net**, which presents speakers on topics of interest to UNIX users. He describes the meetings as an "informal, technical setting where questions are welcome and adds that there's no charge to attend. The meetings take place on the fourth Tuesday of the month at 3000 Hanover, Palo Alto. You can call Grant at (408) 294-5319 for more info.

LA Punk enthusiasts will want to check out the **Flipside BBS** at (213) 693-6971, 300/1200 from midnight to noon. It's the electronic counterpart to **Flipside** (which our informant, **Joe Henderson**, tells us is "LA's oldest punk rock fanzine").

Finally, another cry for help. **Rachel Cohen** of

Oakland writes: "I found your ad and thought, 'This is my opportunity to find people who are using **Peachtree** software.'" Apparently she's been looking for fellow Peachtree users to no avail for quite some time now, and has decided to start a group herself. So if you're a Peachtree user looking for kindred spirits, give Rachel a call at (415) 465-3570, or write to P.O. Box 20607.

That's all for this month. Keep those cards, letters, and other fascinating bits of paper coming in to this extremely non-paperless office (5951 Canning St., Oakland, CA 94609) or send us e-mail on **The WELL** (415/332-6106), where we go by the name of **microx**. □

BULLETIN BOARDS

065

Remote Bulletin Board. (065) 242-7669 (Singapore). 24 hours, N-8-1, 300/1200/2400, UL/DL 67 meg. Sysop: Umar A. Rahman.

206

The Board Of Review. (206) 361-8018. 300/1200 baud, 8-N-1, 24-hours, Commodore. Sysop: Ron Strauss.

28 Barbary Lane. (206) 323-2828. 300/1200 baud, 8 bits, 1 Stop Bit, Full Duplex, No Parity, 24-hours. Sysop: Mrs. Madrigal.

209

Region 7 TEC Center BBS. (209) 571-5085. Specializing in music and schools. 24 hrs, 300 baud. Sysop: Dan Guerra.

Inn Finitly BBS. (209) 521-6240. Inn Finitly is an Atari based BBS. Operates on a 130XE with 320K. Signalman 300/1200/2400 baud, 24 hours a day. ATASCII—ASCII. Sysops Buzz and Jann Kelley.

Bullseye BBS. Stockton, CA. (209) 474-FIDO. IBM and compatibles. 300/1200/2400 baud. Open 24 hours, 8-N-1, FidoNet 161/31 Valley PCUG. Sysop: Bob Loeber. Validation required. Lots of MS-DOS shareware.

The Spotlight BBS. (209) 368-5591. 300 baud, 24 hours, 8-N-1, dual drive Commodore 64 operated. Sysop: The Spot.

Bertha Board. (209) 239-9853. 8-N-1, 300/1200/2400 baud. 24 hours. MS-DOS oriented, with emphasis on programming source code. Free. Sysop: Ken Roach.

Motherload-64 BBS. (209) 754-5530. 8-bit, 1 stop, Punter and X-Modem, D-load, 9:30pm to 6:30am only! 300 baud. Motherload-64 is run by a programmer who is also a Plus/4 owner. Sysop: Larry Anderson.

213

Lynzie's Motherboard (818) 508-6482/(213) 650-0519. 24 hours, 300/1200/2400 baud, 8-N-1. Private E-mail, download library, dating matchup, interactive chat between users, 4 phone lines on rotary. Public boards include employment, food and restaurant reviews, sci-fi, political, debate, for sale and many more. Monthly social happenings for local users. Sysop: Lynzie Flynn.

Bulletin Board System. BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

Videodrome BBS. Where computers and video meet. (213) 324-5882. Open weekdays 4

pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

HUG1. (213) 874-8256. 300/1200 baud, 8-N-1, 24 hours. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. Sysop: Jose Vasquez.

International Collectors Network. Coins, stamps, baseball cards, books, records, antiques and anything collectable can be bought, sold, or traded on the International Collectors Network BBS. Regional lists of collector events and shows in many categories. Also names and addresses of many collector organizations. Accessible using PC Pursuit. Data phone available 24 hours, 7 days at 300/450/1200/2400, 8, N.1. (213) 204-0646.

The Computer Consultant's Network. (213) 479-4074. Running a modified version of Martini Software. 24 hours a day. This is not a job board, but merely a place for computer professionals to network and share information.

Computer Conference Center. (213) 212-5267. TBBS w. Commodore, IBM, TI, Atari, Epson, Apple etc. sub-boards. Large DL with CP/M, MS-DOS and TR-DOS programs. Laurie Flood, sysop.

Hughes Aircraft Message Service. Uploads and downloads for Mac, IBM, Commodore, Atari, etc. Public message boards. (213) 549-9640. 300/1200, 24 hrs., 7 days.

Monolith-1.7 great public boards, private electronic mail, social events. (213) 659-JEDI. 24 hours, 1200/300. Sysop: Erik Goldman.

Mid-Cities Atari ST BBS. 300/1200, 8-0-1, 24 hours. (213) 867-1943. Sysop: Darin Ferraro.

PC Heaven. A multi-computer BBS that features downloads for many different PCs. E-mail, files for various machines, general to SIG message bases. No fees, no special application request forms. Just a fun BBS for everyone. (213) 374-7929. 300/1200, 7 pm-7am M-T, 24 hrs. F-S-S. Sysop: Tony Reeves.

T.U.S.D. (213) 533-4545, 10+ megs downloads, WWIV software, BBS list, several message bases and SIGs, mail, online help. Run on IBM AT, 24 hours for summer (5pm-7am during school). Free. 300/1200 baud. Sysop: Wayne Hoover.

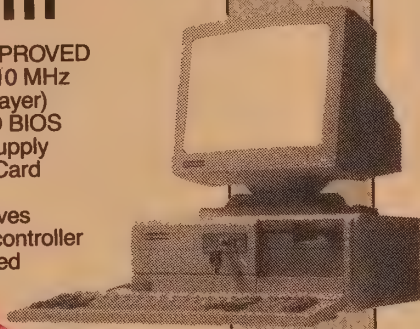
Jukebox Bulletin Board (JBBS) (213) 670-8053. 8-N-1, 24 hours, 7 days, 300/1200 baud. Message board for buyers, sellers, and anyone interested in antique jukeboxes. Free. CP/M password available on request. No Fees. sysop: Ray Etchepare.

Secret Partner 1. (213) 543-5273. 8-N-1, 24 hour, 300/1200 baud. "Find your long-awaited

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sweetheart." Walter F. Howard, sysop.

Time-X-Change. (213) 329-3922. 8-N-1, 300/1200 baud, 24 hours. The West's only BBS dedicated entirely to the Timex-Sinclair and CP/M user. Online games and information programs, full feature electronic mail and message system, public domain software. Free. Sysop: Dave Clifford.

Videoman RCP/M and Media Man Database. (213) 666-8588, 300/1200 baud. Hollywood's only remote computer for the show business and entertainment community. Free comprehensive databases, including hard-to-find products and services (US and Canada), television/motion picture production/post production services (worldwide), Los Angeles restaurant guide, remote access computers (worldwide), People In Entertainment and many more. CP/M, MS-DOS pd programs. 40 megabytes and growing. 7 days, 24 hours. Sysop: Norman H. Strassner.

Bloom County "Nochange" BBS. (213) 615-0528, 8-N-1, 24 hours, 7 days, 300/1200/2400 baud. Bloom County is an IBM BBS running Nochange software. This system features online games including Pyroto Mountain, 200 Sector Traders, Empire, Original Adventure and more! There are over 30 megs of space devoted exclusively to the latest PD software and a great e-mail system too. Call the ultimate bulletin board today. Sysop: Brody Schiess.

Find-A-Home. BBS emphasis on locating roommates, tenants, rentals, buyers and sellers for both residential and commercial properties. Also private mail and public forums including roommate discussions, dealing with landlords, foreclosures, real estate matters, investment opportunities, money matters, employment opportunities, current events, automotive, classified ads, humor, trivia. Operating on an XT clone with 20MB hard disk at 300/1200 baud.

Online 24 hours. We're a new and free service. Call now! (213) 325-7269. Sysop: Ada Owen.

99 BBS. (213) 947-7777. 7 bits, even parity, full duplex, 300/1200 baud. For TI-99/4A computers. Operates 24 hours, 7 days. Downloads, uploads, multiple message boards and more. Sysop: Roger Davis.

CompuCenter Long Beach. (213) 421-1041. 8-N-1, 24 hours, 300/1200. Multi-interest board in Long Beach with everything from Aviation sub-board to Mature Topics and IBM, C64/128, and Amiga. Sysop: Ken Cothern.

Intelligent Solutions BBS. (213) 494-1243. IBM software and hardware tips. No registration, no rules, no restrictions to new users. Easy-to-use PC-Board system. Our user base consists of some of the most knowledgeable consultants and programmers in Southern California. 300/1200/2400 support vices, 8-N-1, 24 hours. Sysop: Thompson McDonald.

The Talk Line. (213) 938-9697. 3 message bases: general board with discussions on current subjects or anything anyone wants to debate, a sports board and a music / movies board. 6 pm-7am. 300 baud, 1 stop, 8 WL, no parity, full duplex. Sysop: Frodo.

The Starship Sardonyx Net. (213) 467-6667. 8-N-1, 300/1200, 24 hours. We offer extensive general files, online games, up and download subs, 8 message bases, e-mail. Large public domain section for Commodore users. Sysop: Zed Yago.

LEGACY/The Law Network. Free exchange of messages and information on Computer Law, Entertainment Law, and Communications Law, and forum for new ideas and directions in the practice of law and administration of justice. Features include e-mail, online law journal, standard legal forms and agreements, and a pro bono conference for free legal advice to non-lawyers. Operating 24

hours at 1200 baud, 8-N-1. Accessible using GTE's PC Pursuit. Call (213) 553-1473. Sysop: Robert H. Kohn, Esq.

BBS-64 Shopper. (213) 598-5841. 8-N-1, 24 hours, 300/1200 baud. Sysop: Scott D. Edson.

Hollywood Midnight Express BBS. (213) 465-0676. Apple board, all computer users welcome. Sub-board for amateur and professional writers, ul/dl of Apple II graphics created by users. 1200 Baud Only! Our BBS now automatically disconnects 300 baud callers. HME Sysop: Michael Thomas. Sub-board sysop: David Batterson.

K&L Tele-Catalog. (213) 327-2255. 24 hours, 300/1200, 8-N-1. 27 sub-boards including electronic and computer shopping, general board, game boards, club boards, classifieds, tips and tricks. No fee. Sysops: Louis B. Dubin, John Altpeter.

Atari Telecom. (213) 494-7083. 24 hours, 300/1200 baud. Supports all Atari computers. 20+ megs online storage. 16+ SIGs for discussion. Online games, role-playing games, ATASCII graphics, large online info libraries, ul/dl. Standard parameters. New users needed! Sysop: Dr. Matrix.

The Crest RBBS. (213) 471-2518. Call for one of the best IBM RBBS around, running with the latest merge for RBBS-PC. Win free time weekly with secret password. Features include the latest e-mail, ul/dl, color/music online. Best of all it's FREE! Operating 24 hours a day at 2400/1200 baud. NO 300 BAUD ALLOWED! Sysop: Eric Newhouse.

The Luv Connection. (213) 663-6886. 300/1200/2400 baud, 8-N-1, 24 hours. Nine lines, private e-mail. Chat online with other users. 28 different boards to access in the Tack Room: The Perfect Matchmaker, Dating, Music/Video/Film, Sports, Robotics, Computer Stuff, Programmers Lounge, Handicapped (Physically Impaired), Sauna, Men's Locker Room, Powder

Room, Take Aim. The largest library in SoCal for the latest demos and Public Domain programs for D/L. Luv Connection Network offers true nationwide networking. Prime sysops: Todd & Charlotte.

LAUG-LINE. (213) 559-7367. 300/1200, 7 days a week, 24-hours. Sysop: Gary Woolard.

Hollywood Commodore User Group Hug #1. (213) 466-3049. 8-bit, no parity, 1 stop, 24-hours, 300-1200 baud, running on C-NET. Sysops: Joss A. Vazquez & Zed Yago.

Alinco Ind. RBBS. (213) 402-4716. 300/1200/2400 baud, 8-N-1. Upload and download of public domain files. E-Mail, conferences: games, communication and technical references, systems and peripherals price list. This is a totally new board. Sysop: Albert Chang.

Long Beach AIDS Information BBS. (213) 663-2025. 24-hours, 300/1200 baud. Information on AIDS issues, especially experimental drug therapies. Also serves as a forum for discussion. Sysop: Ken Ragge.

The Long Beach Bulletin Board. (213) 438-6783. 8-N-1, 24 hours, 300/1200/2400 baud. The Long Beach Bulletin Board has been in operation for over three years supporting 3000 plus users. We have over 60 megs online with over 1500 files for downloading. Special Interests Groups include AD for BBS notices and sale items, CD for all CAD/CAM applications, COMM for discussing communications topics, GAMES, MIDI and STARFLT. All SIGS are open to the public. Call one of Southern California's oldest RBBS systems in operation. Sysop: Forrest Litke.

Landing Strip. (213) 597-7773. 300/1200, 24 hours, WWIV software. A computer board service dedicated to aviation and online adventure games. Features aviation related downloads for IBM computers and has download areas for Apple and C-64. Unique online games that must be played to be fully appreciated. Sysop: One-Eight Charlie.

Chat Line. (213) 534-4311. 24 hours, 300/1200 baud. Multi-line, multi-user. Interactive chatting between online users. Downloads for all popular computers. Innovative and informative public message exchanges. E-mail. Sysop: Tony Broderick.

Digital Diversions. (213) 423-5797. 24 hours, 300/1200/2400 baud. Accessible through PC Pursuit. On-line 24. Fun and friendly. File transfers. Special interest groups. Give us a try! Sysop: Jeff Glassman.

LA Sportsbook. (213) 545-6528. 8 bit, 1 stop, No parity, 24 hours, 300 baud. For the sports and horse racing fan in Southern California. Talk sports and horses. We pick winners at better than 50%! Sysop: Rich Kopro a.k.a. The Sports Master.

Melodyland BBS. (213) 225-9279. 8-N-1, 24 hours, 300/1200 baud. Melodyland is a message only BBS with several conferences filled with stimulating discussion. Also features a "Friends of Bill W." area specifically created for members of Alcoholics Anonymous and other 12-step programs. The AA section features a local "e-meeting." Melodyland is a participating node in the Recovery National Network, a nationwide "echo" for members of the 12-step programs. Sysop: Melody

(PG) Board. (213) 836-6439. 24 hours, 7 days, 300/1200 baud, 8-N-1. Relationships, sexuality, money, morality, economics, politics, religion, art, music, literature, theatre, philosophy, the nature of the mind. If they mean a great deal to you, please give us a call. No uploading or downloading. Conversation only.

CompuCenter/LA. (213) 435-3757. 8-N-1, 24 hours, 300/1200 baud. Multi-user board including conferences for Amiga, IBM, C64, C128, TRS-80. Reviews on software and hardware. For Sale section and much more. Up/Downloads section for all listed. Sysop Rick Gaspa.

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Gladiator's Den. (213) 860-2221. 300/1200 baud, 8-N-1, 24 hours.

Computer Quick, Inc. (213) 941-3554. 300/1200 baud. Even, 7 data, 1 stop. BBS dedicated to repair, upgrade or information on computers only. Sysop: Sam Noonon.

Spenser's BBS. (213) 732-0109. 8-N-1. Sysop: Chris Spencer.

Amiga Exchange. (213) 325-1796. 300/1200 baud, 8-N-1, 24 hours. Downloads, uploads, e-mail, news, rumors, operating tips, hardware/software reviews, classified ad section. This is a new BBS. Sysop: R. Takahashi.

The Westside. (213) 933-4050. 300/1200/2400 baud, 8-N-1, 24 hours. Ten lines with private and group chat, e-mail, match, 30 public message and game boards, on-line library and electronic buyer's guide/database. Sysop: Dave.

Star Wars Lovers Of America (213) 867-7724. No modem. 9:00 am-12:00 pm. Run by the Drive-way Group Ltd., User Group. Devoted to LucasFilms and Star Wars. Tracking of software, figures, data and more. If you have the SW collection, figures, any software that pertains to SW then call. We could buy, sell, trade, items. Information on new releases from George Lucas. We love Star Wars and George Lucas. If you do too, then call. Sysop: The Force.

The Beta RBBS. (213) 393-9777. 1200/2400 baud. No 300 baud allowed. 24 hours. New feature articles for audio and videophiles. A special emphasis on the latest video technology. Other recent additions include movie and concert reviews and movie news. Beta RBBS is not another downloading service but a BBS that entertains with informative bulletins and lively discussions.

Easy Reader Newspaper. Electronic edition. Available on Tele-Web. (213) 372-4050. 7-E-1. Type GO EASY upon entry. Includes movie listings, classifieds, articles. Order classified ads on-line. Send letters to the editor.

LA Weekly Newspaper. Electronic edition. Available on Tele-Web. (213) 372-4050. 7-E-1. Type GO WEEKLY upon entry. Includes entertainment listings. Order classified or a subscription on-line.

MicroTimes Magazine. Electronic edition. Available on Tele-Web. (213) 372-4050. 7-E-1. Type GO MICRO upon entry. Includes articles, BBS listings and much more. Unlimited free access.

Hughes. Support system. Available on Tele-Web. (213) 372-4050. 7-E-1. Type GO HUGHES upon entry. Online career center. Over 100 job opportunities. Send resume direct to Hughes.

Rockwell. Available on Tele-Web. (213) 372-4050. 7-E-1. Type GO ROCKWELL upon entry. El Segundo, online career center. Engineering and management job opportunities. Send resume direct to Rockwell.

Mortgage Loans. Available on Tele-Web. (213) 362-4050. 7-E-1. Type GO LOAN upon entry. Mortgage loans and discount loan rates. Online 24 hours a day. Provided by Pacific Mortgage Group, suppliers of discount home mortgage loans.

Hatzlacha. (213) 466-3861. 300/1200 baud, 8-N-1. Jewish BBS running Stonhenge Computer Message System. Also general PC-compatible discussion.

The Hotline. (213) 285-0810. 300/1200/2400 baud. 24 hours. Multi user. Affiliated with the National Data Broadcast System. Now online for all of Southern California with Newsbytes, Computer Entertainer Newsletter, list of music and software hits, weekly columns by Dan Gutman, electronic mail. Video take-out mail order with online ordering of software. Plus many exciting new features. Sysop: Jon Badeaux.

Flipside BBS. (213) 693-6971. 300/1200 baud. Midnight-Noon. Flipside's (L.A.'s oldest punk rock fanzine) electronic counterpart. Sysops: Al and Hud.

305

Miami PC Users Group BBS. (305) 621-7534. 2400 baud, 24 hours. PC-Pursuable. Sysops: Ken Burch and Bob Ash.

312

Feminist BBS. (312) 225-9138. 8-N-1, 24 hours, 300/1200 baud. Feminism, women's issues, general talk. Sysop: Susan B. Anthony.

408

Atari Base BBS (408) 745-5308 or (408) 745-2642. 300/1200 baud, any time, any day. The official BBS of Atari Corp, for all Atari computers.

Byte Bandits ColossusNet. (408) 374-3974. 300/1200, 24 hours. Network USA. Sysop Sam C. Brown.

Bizcomp BBS. Sunnyvale, CA (408) 720-9212. 300/1200, 24 hours. Message base specializing in modern technical help, with a special message conference for sysops. No file transfers available. No registration fee, but requires home & business phone numbers on first call.

Non-Smokers BBS. (408) 298-4277. 298-GASP. 8-N-1, RBBS PC, 24 hours per day, 300/1200 baud. Sysop: Ed O'Dwyer. Features non-smoking areas in restaurants and hotels, health info, diner's conference, messages, public domain software.

Home Board (408) 277-0106 no fee. A non-profit BBS focused on housing issues in Santa Clara County. 1200 baud, 24 hours M-F (8 am Monday through 5 pm Friday). Sysop: Beth Wyman (408) 299-2566.

Board III (408) 985-7573. 300/1200 baud, 24 hrs., 8 bits, no parity. Board III is an ongoing experiment in telecommunications. Atari-based, but all computers welcome. Sysop: "The Chairman."

ADV In Lrn (408) 247-4769.

The CATS BBS (408) 356-8902. Computer Assisted Typography Service Typesetting BBS. Online tutorial of PC typesetting, public message bases, 300 baud only.

Sailors Refuge (408) 262-3963. 300/1200/2400 baud, 8-N-1, 24 hours. Signs for most computers, games and more. Unique software. Easy, user friendly. Fast validation. U/L-D/L for all SIGs. Sysop your own special SIG. Over two years of non-stop operation. E-mail system. Library text files. Sysop: Ron Pierce.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

The Man O'War. (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

Silicon Valley Sysop's Exchange. Merlin's Castle BBS (300 baud only), (408) 578-1563. Sharks Head BBS (300/1200 baud), (408) 247-4810. The Man O'War (300/1200 baud), (408) 243-2370.

SDI Clearinghouse BBS. Morgan Hill, CA, (408) 778-3531, 300/1200 baud, 24 hours. Sup-

FREE USER GROUP/BBS LISTING

MicroTimes is a free computer magazine with a current monthly circulation of 140,000 copies per month in Northern and Southern California. We offer a free listing service to user groups, bulletin boards and computer associations. Let us hear from you. Use this coupon for your listing, and feel free to include additional information for our monthly user group column. Please send us your listing by the first of the month preceding the month in which you want your first listing to run.

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Meeting address _____

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Contact name _____

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BBS

Name _____

Number _____

Parameters, operation hours, baud rate _____

Sysop _____

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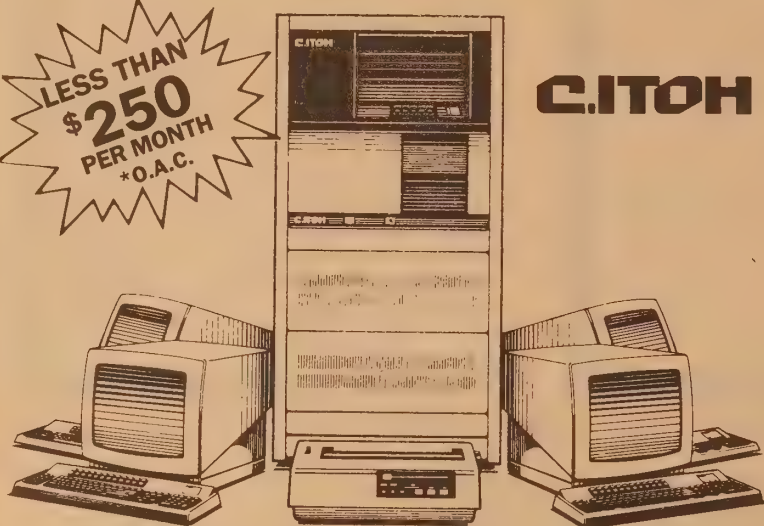
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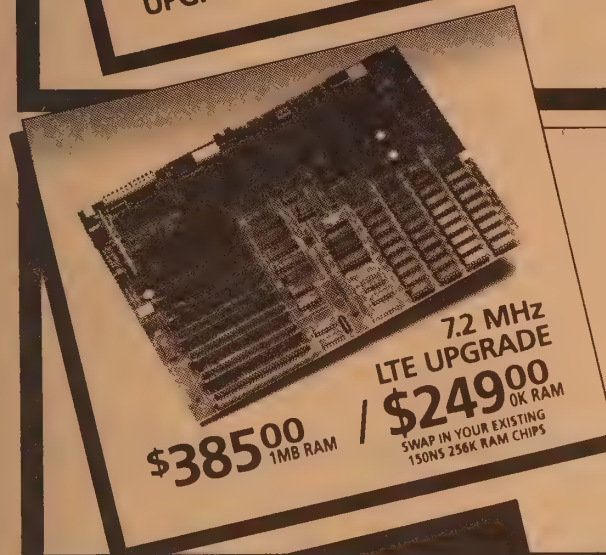
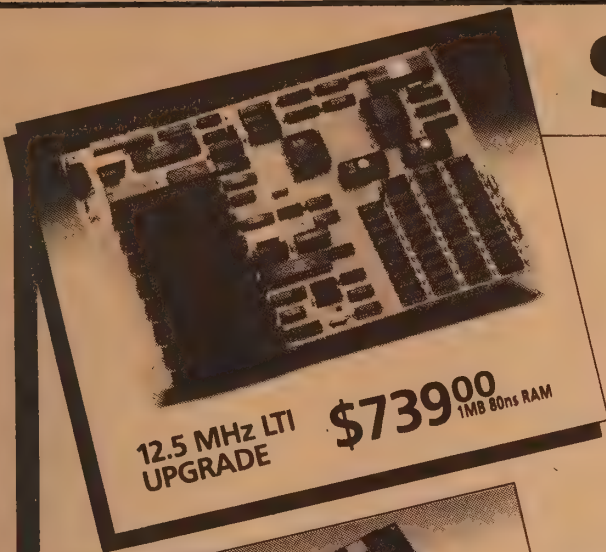
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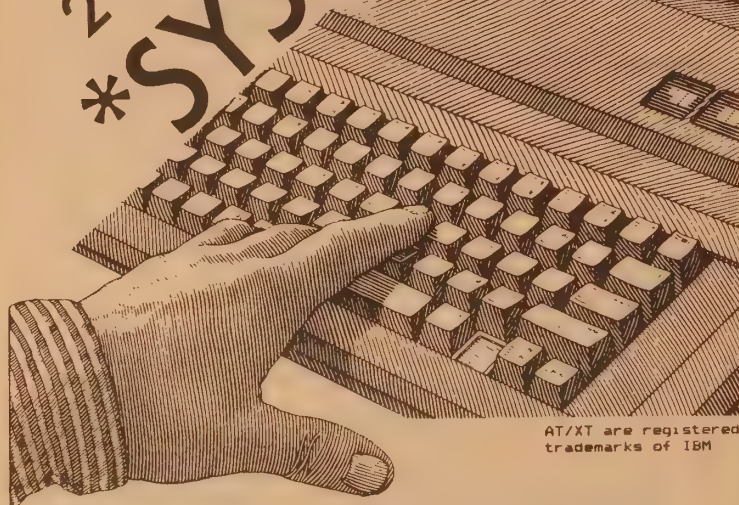
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Jandel Scientific. (415) 331-6408. 1200 baud, 8-N-1, 24 hours. The bulletin board is basically for registered owners of Sigma-Plot and Sigma-Scan, although people who are interested in what our programs can do should call our bulletin board and leave their name, address, phone number and product of interest. We welcome calls concerning any type of scientific applications programs. Our bulletin board also has a sample graph file that can be output to a plotter. Any questions or comments can be sent to our sysop, Jan.

AT/XT Clone User Group BBS. (415) 552-9070. Sysop: Edwin Rutoit.

Augment BBS. (415) 659-9169. BBS for the Amiga User Group Of Silicon Valley. Sysop: Jim Thomas.

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Richmond OPUS. (415) 620-6500. 300/1200 baud. 8-N-1. 6:00 am to 6:00 pm daily, 24 hours on weekends. City of Richmond BBS. Public information on city activities. Download information files.

601

Bo's Houseboat. Node 1: (601) 992-4111. Node 2: (601) 992-4338. 300/1200/2400 baud, 8-N-1, 24 hours. RBBS-PC, MS-DOS, IBM. Runs on IBM XT clone, 88 meg hard drive, Sony CD-ROM 512 MG. Over 15,000 files for downloading. Sysop: Bo Trotter, Brandon, MS. 39042.

619

Ramona BBS. (619) 789-6235. 24 hours, 300/1200 baud, C128, C64, Amiga, Atari, IBM, CP/M. P.O. Box 373, Ramona, CA 92065. Sysop: Digiteer.

Sysware BBS. 24 hours, 300/1200 baud, (619) 278-8661. Commodore machines only. Sysop: Don Malette.

The Nassau XPress. (619) 433-XPBS. 8-N-1, 300 baud, 24 hours. An information and entertainment BBS with 11 message bases including electronics, amateur radio, computer news, music, adventure games, BBS review. Full access is granted to long distance callers with same day validation for new users. UL/DL available using XModem or Punter. Private e-mail, text files, online games and utilities. Sysop: Dan Wright.

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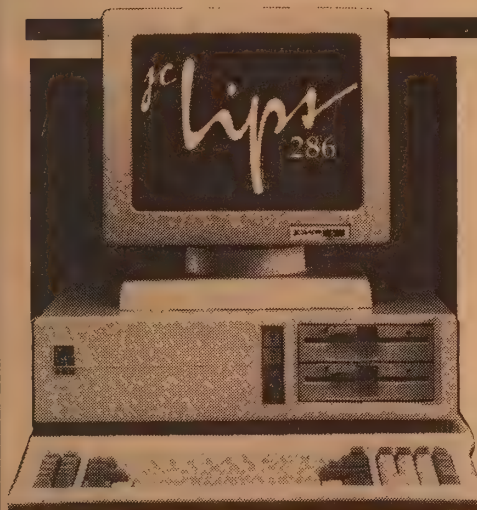
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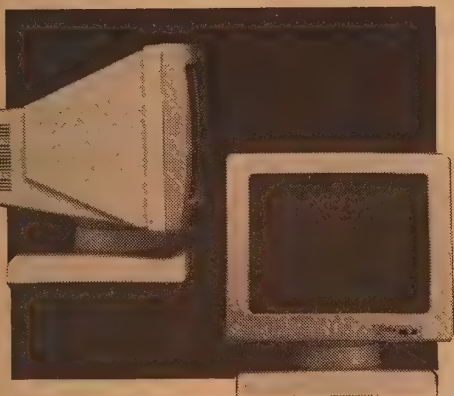
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702
Public Domain Software Interest Group. (702) 794-3665. 24 hours, 300/1200/2400 baud, 8-N-1. Public domain software available for downloading, message board, and user supported donations of software. Sysop: T. Heisserman.

707
Napa Valley RBBS / RCP / M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

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Valley of the Moon BBS. (707) 996-7922. 24 hours, 7 days. 300 baud. Free. Primarily set up for Radio Shack and COCO II, but all are welcome. Come join us. Sysop: Wes Ford.

Newsstand. (707) 539-3612. 300/1200 baud, 24-hours. Discussions on philosophy, politics and other topics. No Fee. Sysop: Bryan Magers.

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PCUGR Superboard. (707) 546-4938. 300/1200/2400 baud, 8-N-1, 23 hours. Fido-net BBS. BBS for PC Users Group Of The Redwoods. Sysop: Mike Farell.

Short Wave Listener's Guide BBS. (707) 526-0924. 300/1200 baud, 8-N-1, 24 hours. Four boards: Pub Discussion, SWL Signal Reports, Hints & Tips, Hardware Corner, Text files: Eng Lang Bcast Skeds. Sysop: Dave Willey.

714
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The Byte Zone BBS. 7 days, 24 hours, 300/1200 baud. Serves all Tandy computers and many others, including MS-DOS. Features adventure help files, electronic mail, message bases and download menu. Sysop: Franco Collino. (714) 639-3566.

CMC Computer Systems. (714) 835-0910. Information boards: Apple II, Apple III, Laser 128, IBM, Buy/Sell, hard disks. 300/1200 baud, 24 hours. Sysop: Charles F. McConathy.

Amiga-Line. (714) 772-4097. 24 hours, 300/1200 baud. 100% Amiga for Orange County. Sections for graphics, sound, BASIC, ROM kernel, C, Hardware and Games. Sysop: Tom Jacobsen.

Diamond Bar BBS. (714) 923-1031. 300/1200/2400 baud, 8-N-1, 24 hours, 365 days. Ten meg online. Affiliated with the Diamond Bar User's Group. Sysop: Jonathan Hart.

The WOCCUG Board. Operated by West Orange County Commodore User Group. EBBS, 8-N-1, 24 hrs, 300/1200. (714) 772-4182. Sysop: Mark Stanford.

The Buckeye BBS. (714) 821-0589. C64, Punter, Xmodem, 300/1200 baud, 24 hours. Sysop: Art Collins.

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GameNet. (714) 520-4263, 24 hours, 300 baud, multiuser board. This Orange County based system features interactive games, a chat area, and an online mail section. Sysop: Merlin or Patches.

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Software Exchange. (714) 552-3515. 300/1200/2400, 24 hours, 7 days, 8-N-1. Specializing in public domain and shareware for IBM and compatibles. Over 2000 programs in 122 megabytes on line. Features include private and public message bases, conferences and online help and menu screens. Beta Tester for "Wildcat," the next generation of BBS software. Sysop: John Coon.

C-TUG BBS. (714) 458-1288. Punter protocol, 24 hours, 300/1200 baud. Sysop: Les Gertz.

77-Amiga. (714) 77-AMIGA. 300/1200 baud, 24 hours, 40 meg. drive. Sysop: Al Cheser.

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The Pleasure Connection. (714) 773-5326. DYM 502 Buena Park CA. 300/1200 Baud, 24 hours. Computer dating, open forums, adult boards, etc. Sysop: Russ.

Tripwire Wildcat. (714) 964-1146. 8-N-1, 300/1200/2400 baud, 24 hours. New BBS. Tripwire BBS is providing both pub-

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717
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CCUG BBS. Central Coast Commodore Users Group. (805) 934-2216. 24 hrs/7 days. 300 baud, Punter BBS protocol for downloads. Sysop: Greg Johnson.

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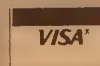
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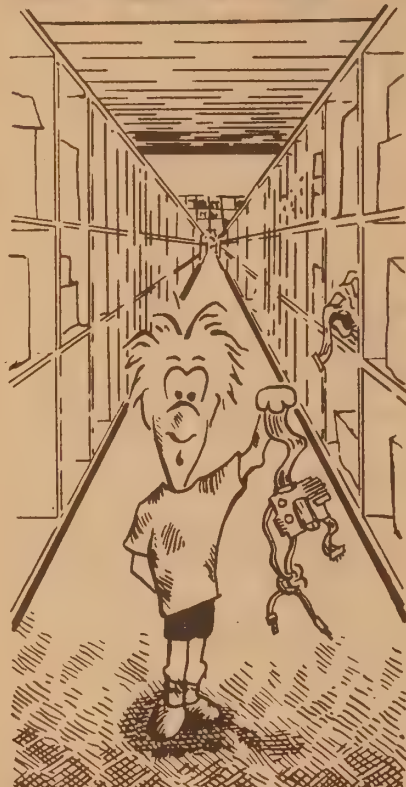
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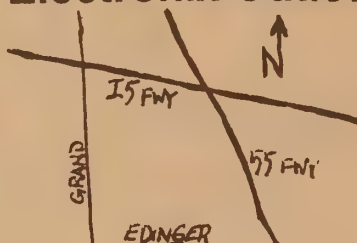
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Success BBS. (805) 238-7359. 300 baud, 24 hours. Commodore user group. Sysop: Larry Sarver.

813
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818
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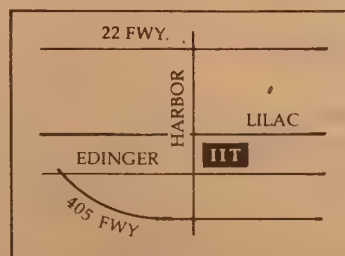
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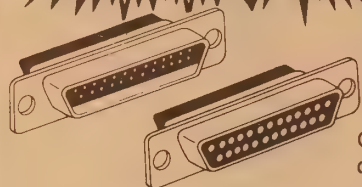
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DB-15 Socket	.76	.59	.54	.44	.38
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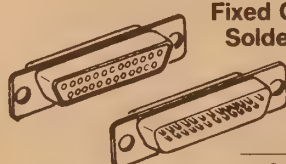
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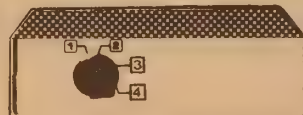
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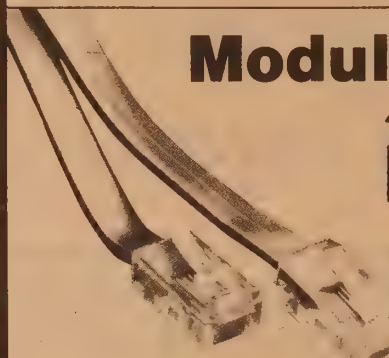
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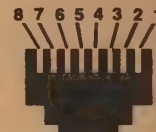
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RJ-11
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These cables have a modular plug on each end.

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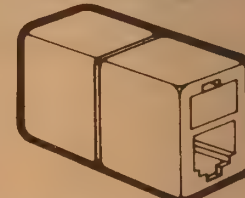
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The City Of Grey. (916) 423-3987. 300/1200 baud, 24 hours. Atari 8 bit BBS. Sysop: The Sheriff.

ASSOCIATIONS

Computer Professionals for Social Responsibility. The LA chapter is interested in computer reliability and preventing nuclear war, the socially useful direction of computer research, and similar topics. They meet most third Wednesdays at 7:30 pm at varying locations. Contact Rodney Hoffman, P.O. Box 66038, Los Angeles, CA 90066, (213) 932-1913 for more information.

Organization of Professionals, Educators, and Novices (OPEN). Tutorials, random access period, feature presentation, public domain library, and CP/M literature are all part of the monthly meetings of Osborne owners/users and MS-DOS transportables. Club BBS and newsletter. Call Frank L. Christ at (213) 498-4186 for more information. Meetings at Learning Assistance Center, CSU Long Beach, 3rd Wednesdays, 7 pm.

The North Orange County Computer Club. This group is the largest and perhaps the oldest in the county. It is affiliated with a large number of special interest groups and offers something for just about every user. General meetings

are usually the first Sunday of every month in the Hashinger Auditorium, Chapman College, Orange. For info, call (714) 998-8080.

The South Orange County Computer Club. A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Costa Mesa. Meetings begin at 7:00 P.M.

Valley Computer Club. Monthly meeting at 7 pm, first Wednesday of month in Burbank Board of Realtors Bldg., 2006 W. Magnolia Blvd., Burbank. All types of micros represented. Contact W.R. Robinson, 11850 Louise, Granada Hills, CA 91344, (818) 368-1383.

San Diego Computer Society. Umbrella organization for over 40 Special Interest Groups (SIGs). Sponsors meetings, newsletters and annual computer fair. Meetings at Mesa College, 7250 Mesa College Drive, San Diego, 11:30-4, third Saturday each month. Contact Membership Chairman, P.O. Box 81444, San Diego 92138, (619) 549-3783. BBS (619) 549-3788.

Consolidated Computer Club. Dues \$25 yr. For meeting place and time send SASE to David Nussbaum, 14200 Polk Street, #53, Sylmar, CA 91342-2966, or call (818) 362-9718.

Hughes Aircraft Computer Clubs. This club is for Hughes Aircraft employees only, but the BBS is open to everyone. Upload and download boards for Macintosh, IBM, Atari, Commodore, etc. Each board has its own public message service plus general message board. Contact Bud Grove, 21111 Dolores #146, Carson, CA 90745. BBS (213) 549-9640, 300/1200 baud, 24 hrs., 7 days.

Ventura Personal Computer User's Group. All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. Contact Mike Regan, President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

Micro User's Group — SFV Board of Realtors. Meetings 7232 Balboa Blvd., Van Nuys, 7 pm, third Thursday. Contact Mary Lou Williams, (818) 786-2110 for more information.

South Bay Computer Education Group. Supporting Apple, Atari, Commodore, IBM and compatibles, and TI99/4A. Meeting 2nd Wednesday of each month. Time 7 pm at 3675 Torrance Blvd., Suite 202, Torrance, CA 90503. Contact Jack Ward (213) 530-4879 or Judy Adams (213) 540-5010.

UCLA PC Users Group. IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library, SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

Citizens Veto. For users with an interest in socio-economic issues who might want to try their equipment in working a model of a new approach. Primarily graphics and numbers, minimal text. Ewald O. Schlachter, (415) 452-0151.

ICCA (Independent Computer Consultants of America). A nonprofit national association dedicated to the independent computer consultant. Its goals are to promote professionalism within the industry, increase awareness of ICCA to clients, and provide group benefits to members. Meets at Revere House, Tustin, 2nd Thursday, 6 pm. Contact Bill Creel, membership chairman, ICCA-OC, P.O. Box 3067, Santa Ana 92703, (714) 666-1981.

LAC-BUG (Learn About Computers — Beginner's Users Group). All computer owners and prospective owners eligible, ages 3 to adult. Educational materials and hands-on training included with membership. 24 hour telephone: (213) 372-8909. Mailing address: 6506 Arizona Avenue, Suite 127, Los Angeles, CA 90045.

Association For Women In Computing. L.A. Chapter meets on the second Wednesday of

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Southern California Geneo-logical Society Workshop. Meets the fourth Saturday of the month, 4:00-6:00 pm, at the SCGS Library, 122 S. Golden Mall (rear), Burbank, CA 91502. A self-help group to provide a forum for information and experience exchanges on the use of computers in genealogy. Contact W.R. Robinson, SCGS, P.O. Box 4377, Burbank, CA 91503. (818) 368-1383 or (818) 843-7247.

NATIONAL/INTERNATIONAL

Network Users Association. 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

TPUG World's largest Commodore Users Group. \$25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 5300 Young St., Willowdale, Ontario, Canada M2N5R2, (416) 733-2933.

Apple Co-op. 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues \$5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

MicroPro Users Group of America. National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hard-

ware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

Golden Apple Club, Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, 35100 Padua, Italy.

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Getec s.r.l. Contact Silvio Esengrini, Via dei Guarnieri Nr. 24, 20141 Milan, Italy. Phone: 39/2/5696502, 39/21 5694185.

Italtel S.p.a. Contact Michelangelo Sala, C.Na, Castelletto, 20090 Settimo Milanese, Milan, Italy. Phone 39-2-4388-4288.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

KAPPA (Memphis Kaypro Users Group). Meetings at 2 pm, 1st Saturday of the month, Room 2, Jennings Hall. Contact Hugh Lamar, 5983 Macon Cove, Memphis, TN. (901) 377-4140.

The AppleWorks Users Group (TAWUG). c/o Regional Rep, 27421 Berenda Way, Hayward, CA 94544, (415) 887-7499.

FORTH Interest Group, International Office. P.O. Box 8231, San Jose, CA 95155. For further information call (408) 277-0668.

Apricot User Group (APRICUG). Box 98, Malverne, NY 11565.

Spellbinder Users' Group has an international newsletter with useful macros written by members, advice on new applications, news, and word-processing

problem solving. All experience levels. California members welcome. Write P.O. Box 14, Newark, Notts, England NG24 4TP; telephone (0636) 77313; telecom Gold/Dialcom Mailbox 72: MAG95610.

National TeleVideo Users Group. Meets 7:30 pm, 3rd Thursday, 1170 Morse Ave., Sunnyvale, P.O. Box 22007, San Francisco, CA 94122. Call for info—David, (415) 753-1552.

Apple Fontrix Club. Monthly newsletter. P.O. Box 29857, Thornton, CO 80229-0857.

N.A.B.V.I.C.U. - The National Association of Blind and Visually Impaired Computer Users. The purpose of this group is to gather information that will assist the blind or visually impaired person in utilizing the enormous potential of computers. It supports **Compu-Help**, a menu driven database-bulletin board programmed for use by the blind and visually impaired. It is available 24 hours a day, 7-days a week, 300/1200 baud, 8 or 7 bits, even or no parity, 1 stop bit. (916) 786-3923. Compuhelp is also available on disks. For more info, contact Otto C. Haiungs, Chief Executive Officer, Sysop, at P.O. Box 1352, Roseville, CA 95661-1352. (916) 783-0364.

28 Barbary Lane. Meets at 121 13th Ave. East, Seattle, WA. Fridays 8:00 pm. Contact A. Madrigal, (206) 323-2828. BBS: (206) 323-2828.

MICROenvironment: Micro-environmental Information Consortium For Researchers Overseas. World Headquarters, 712 Avery Rd. W. Winlock, Washington 98596, USA. Washington phone: (206) 262-0159. California phone: (415) 524-9309. Micro on MCI mail, ECO-NET & WELL TELEX number 6502928733 via WUI.

American Computer Users Temporarily in Europe (A.C.U.T.E.). Going overseas or already there? We are a users group dedicated to helping you better adjust and understand how to survive in the overseas environment with your computer system. We show you how to find things you will need at reduced member prices. We also consult firms and developers on how to make software more acceptable to the international market. We do foreign language translation of computer software and provide referral services. Further information available by mail: A.C.U.T.E., Postfach 4, D-8818 Lehrberg, West Germany.

Folklife Terminal Club. Almost Free Software. An international Commodore computer users group, with members in more than twelve countries, has made its software library available to other user groups and individuals. The club has issued new catalogs of software from its archives which contain more than 6,000 public domain programs. The programs are stored on diskettes and are usable in various configurations of PET, CBM, VIC, C-64, PLUS 4 and C-128 computers. The software itself is free. The first diskette that should be ordered is the new "CATALOG DISK" which contains an automatic disk cataloging program, a listing of all the available programs, complete instructions and Associate Membership in the club. There is a copying and mailing fee of \$15 per diskette. Please specify which computer and disk drive you have. Contact Folklife Terminal Club, Box 555-DN, Co-op City Station, Bronx, NY 10475.

Miami PC User Group. Meets at 16400 N.W. 32nd Ave, Miami, FL. Second and fourth Wednesdays at 8:00 pm. Contact Jeffrey Feinberg, 2500 E. Hollandale Beach Blvd., Hollandale, FL 33009. (305) 457-7744.

USER GROUPS

AT&T

AT&T PC6300 Users' Group. Meetings at various locations—contact BBS for latest information. Or write Eric Levinson, P.O. Box 7364, Burbank, CA 91510. BBS (818) 954-0530, 300/1200, 8-N-1, 24 hours.

ORCA - Orange Riverside Counties AT&T 6300 UG. Meetings bimonthly, second Saturdays, 11:30 am, at 2144 Michelson Drive, Irvine. Contact Chuck Patten, 1220 Page Circle, Corona, CA 91720, (714) 851-0119, ext. 234.

ADAM

Adam Users of Southern California. Come and keep the ADAM going. We have access to some of the people who developed software for ADAM and we are going to create a base for tips, reviews, and a BBS. Get on line with ADAM. Meetings at Airport College Center, Sepulveda and Century, 4th Sunday, noon. Contact Harvey Klein, 1736 S. Bedford, LA, (213) 553-1062 or Paul Shechter, 5545 Lindley, Tarzana.

ALPHAGRAPHICS

Alphagraphics. Contact Stella or Jim Muller, 16425 Bernardo Ctr. Dr., San Diego, Ca. 92128, (619) 451-2250.

AMIGA

Amiga Friends (AF). Contact Russ Kavanagh, (714) 898-2947. Call for more information, we'll see you there!

San Fernando Valley Amiga User Group (SFVAUG). Meets 2nd Thursday of the month, 7-10 pm, at American Legion, 7338 Canby Ave., Reseda. We've got demos, SIGs, newsletter, PD library, disk of the month, ANSWERS. Bring your AMI, we have lots of room now! Contact Randy Likins, (818) 709-0932.

Bits & Pieces Amiga Group of Anaheim. Meets every Tues-

day 6:30-10 pm at 1130-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, technical help, guest speakers, much more. Contact John Callaci or Mike Dalton (714) 630-8644/630-8711 for information.

Color America. Amiga SIG meets 1-3 pm on the third Saturday of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. For information contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

Amiga Tech Users Group #1. Meets 4th Tuesdays, 7 pm, University Union, Cal Poly Pomona. Contact Mark Randall, (818) 355-6111. Call for more information, we'll see you there!

Amiga Tech Users Group #2. Meets at Rosemead Community Center, 3936 N. Muscatel Ave., near Valley Blvd., Rosemead, 1 pm, 3rd Saturday of the month. Contact Mark Randall, (818) 355-6111. Call for more information, we'll see you there!

Inland Empire Amiga User Group (IEAUG). Meets 7 pm, 3rd Tuesday of the month, California School for the Deaf, 3044 Horace St., Riverside. Contact Paul Corbet (714) 684-6245. Call for more information, we'll see you there!

LA Amiga Users Group (LAAUG). Meets 3rd Wednesday, 7:30 pm, Veterans Memorial Auditorium, Culver and Overland Blvds., Culver City. Call (213) 387-3698 for more information. We'll see you there! BBS: (213) 559-7367.

West Side Amiga Users Group (WAUG). Meets 2nd Wednesday, 7:30 pm, John Adams Junior High School Cafeteria, 16th and Ocean Park Blvd., Santa Monica. Call (213) 451-0713, during the day, for more information. We'll see you there!

Apple/Valley Computer Club. Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm,

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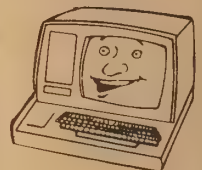
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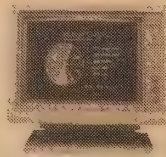


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Ventura Amiga Users Exchange. (VAUX). Amiga users group for Ventura County. Meetings held on the second Monday of each month, 7:30 pm at the E.P. Foster Library, 651 Main Street, Ventura. Call (805) 646-7121.

AMSTRAD
West LA Amstrad. Meets every fourth Tuesday, 8:00 pm at Venice High School. Call (213) 397-7981 for further information.

APPLE
Original Apple Corps. First Apple group ever. SIGs for AppleWorks, Telecommunications, Educators, Macintosh. Meetings in the Santa Monica Mall, second Sunday of the month, 3rd floor Community room, 12 noon. Contact Rich Rollons (213) 378-0707, or Fred Duffy, (213) 396-5515.

The Orange Apple Computer Club meets 9 am-12 pm the first Saturday of each month in the Science Hall at Orange Coast College, Costa Mesa. We have over 700 members, ranging from beginners to certified Apple developers, and a large Apple II public domain software library. There are several very active special interest groups which include Apple III, educators, Apple II, modem and investors. For further info call (714) 770-1865.

South Bay Apple III User Group. Over 85 Apple III users share information, programs, group purchases, product demos. Special interest groups meet 1st Tuesdays. General meetings on 11th Tuesdays at 7:30 p.m., UCLA Harbor General Hospital, Room III. Corner of Vermont and Carson, off 110 Fwy. Contact Gary Fortune, P.O. Box 432, Redondo Beach, CA 90277, (213) 316-7738.

Tri City Apple User's Group (Glendale, Burbank, Pasadena). Speakers, product demos, public domain library and friendly experts ready to answer any Apple II question. Meetings are scheduled the third Thursday of the month at Casa Colina Neurological Learning Center, 50 North Hill St., Pasadena at 7:00 pm. Contact Marie Kaden at (818) 846-6682.

North San Diego Apple Club. Meets 1st Tuesday of each month at Meadowbrook Middle School, Meadowbrook Lane, Poway, 7 pm. Contact Bill Walker (619) 579-9649 or Chuck Newby (619) 566-0387, P.O. Box 75, Poway, CA 92064.

SD Alliers. Want to start Apple III user group in San Diego area. Contact James Fair, P.O. Box 1592, Lakeside 92040, (619) 561-3270.

Applejacks of the Inland Empire. Primarily for Apple II users. Meets first Wednesday and third Thursday of the month, 7-9 pm, at Norman Feldheim Central Library, 555 W. 6th St., San Bernardino. Contact Scott Zehm at (714) 883-2234 for information, or write Applejacks, P.O. Box 23025, San Bernardino, CA 92406.

Appleholics Anonymous of Ventura County. Software library, club BBS, newsletter, hardware and software demos. 150 members. Meetings sometimes vary—call to verify (805) 482-3501, 484-2611, 659-5326, 985-9781. Meetings 3169 Telegraph Road, Ventura, 9:30 am, usually 2nd Saturday.

Apple/Valley Computer Club. Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

The Driveway Group Ltd. User Group. Meets at the Bellflower Public Library. Time and date varies. We are forming a new club! Deals mainly with special interest programmers and soft-

ware. We need members! We need to get started! Phone (213) 867-7724 for information.

APRICOT
Apricot Roundtable Group of Hapless Hackers (ARGHH!) An Apricot user's group is forming in east Long Beach, open to any Apricot, XI, F1, F2, F10 or FP user, or anyone else with MS- or PC-DOS and 3 1/2" disk drives. Phone Jim Bliss at (213) 425-6302. Meetings 7-10 pm, 3rd Wednesdays or at such other time as membership decides, at 7215 Killdee St., Long Beach, CA 90808.

ASHTON-TATE
dBUG-dBASE Users Group. For all levels of dBASE users from beginners to expert. Meets 3rd Monday each month, 7-9 pm, Blue Cross Bldg., 21555 Oxnard, Woodland Hills. For more info contact Bruce As-cough, (818) 789-0723.

dBASE III SIG of UCLA PC Users Group. Meets once per month in Santa Monica—date varies. Contact Tom Rombouts, 1428 N. Curson #6, LA, CA 90046, (213) 874-7471.

dVALLEY dBASE Users Group. Largest and most active dBASE group in So. Calif. Meets 4th Monday of the month in Van Nuys. Large meeting room with plenty of parking. Dedicated to dBASE and its add-ons, all levels. Large cataloged library of programs and routines. Exciting group learning projects, "fix-it-session" at every meeting, plus speakers and demos. For information contact Louie Astorga, President, c/o Real Estate Services, P.O. Box 7140, Canoga Park, CA 91304-7140. (818) 998-3210.

ATARI
Atari Computer Association of Orange County (ACAOC). Join one of the biggest Atari user groups in Southern California. Monthly magazine, large public domain library, and club BBS. Dues \$24.00/year, \$18.00 for non-attending out-of-town members. Meetings at Golden West College, Room 131, Huntington Beach, 1 pm, fourth Sunday of the month (ST meeting same time and place on second Sunday). P.O. Box 9419, Fountain Valley, CA 92728 or (714) 838-3099 for more information.

West LA Atari Users Group. Come join fellow Atarians! Dues are \$25.00/year. Newsletter, P/D library, ATR-Sig, discounts, guest speakers. Please call for directions to meeting room! If you're reading this, you belong with us. Meetings first and third Wednesday of the month, 7:30 pm, Lincoln Park, Santa Monica, Wilshire & Lincoln. Contact Bill Skurski (213) 552-4739.

Los Angeles Atari Computer Enthusiasts (LAACE). Join Los Angeles' largest and oldest Atari Users' Group, now in our 6th year. Enjoy our monthly meetings and newsletter. Participate in our educational SIG (Special Interest Groups) seminars and meetings. Learn how to get the most out of your Atari; access our hundreds of public domain programs; benefit from the help and experience available from our experts. Come as our guest on the 1st Tuesdays of the month (2nd Tues if holiday occurs in 1st week) at 7:00 pm at Granada Hills High School, 10535 Zelzah Ave., Granada Hills, CA. For full benefits, including member access to our 10 meg BBS, dues are \$20/yr (\$25 for entire family). Write P.O. Box 7752, Van Nuys, CA 91409 (include your phone number) for additional information. BBS: (818) 700-1652.

Santa Clarita Valley Atari Computer Enthusiasts (SCV-ACE) invite you to join us. Meetings are the first Thursday every month from 7 to 9 pm at the Moose Lodge, 18000 W. Sierra Hwy., (1/2 mile north of Soledad Canyon Road), Canyon Country. For info call Bob at (805) 259-6540.

Atari Computer Enthusiasts Network (ACENET). Umbrella group representing many Southern California Atari groups. If you can't locate a user group

in your area, contact John Tarpinian at 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

Hooked on Atari Computer Keyboard Society (HACKS). Meetings on the first Saturday of the month in the Burbank area. For more information contact John Tarpinian, 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

AA-Atari Users Group. Meets at Upland Public Library, 450 N. Euclid Ave. Atari 400, 800, XL/XE group meets second Tuesday, 6-9 pm. Call Juan Valdes, (714) 980-6841 for more info. 520/1040ST group meets fourth Thursday 6-9 pm. Call Jay McCarthy, (714) 829-8722 for more information.

MAST—Mid-Cities Atari ST. Meetings at 9025 E. Artesia Blvd., Bellflower, first Sunday, 7 pm. Contact Jane Hughes, 9701 E. Artesia Blvd., Bellflower, (213) 867-0626.

South Bay Atari Computer Enthusiasts (S.B.A.C.E.). Meets 2nd Tuesdays, 7:30 pm, VFW Hall, 1865 Lomita Blvd., Lomita. Meetings consist of guest speakers from software and hardware suppliers, demos by members, q & a periods, along with current Atari rumors. Newsletter, published 6 times a year, included with \$20/yr membership fee. Write S.B.A.C.E., P.O. Box 83668, Los Angeles, CA 90083, for more information, or call Dick Reaser, (213) 645-7063.

AUTOCAD
AutoCAD Los Angeles Users Group. Meetings fourth Thursday of the month (except November and December—Meetings Nov. 20 and Dec. 18), Church of Religious Science, 260 North Pass Ave, Burbank. Contact Testaye Abagaz, (818) 843-5770 (work).

COMMODORE
San Diego Commodore Users Group. Meets third Wednesday, 7 pm, 2557 3rd Ave. (Women's Club), San Diego. For all Commodore machines. Contact Jane Campbell, (619) 584-2872 for more information, or write: P.O. Box 86531, San Diego, CA 92138-6531.

San Fernando Valley Commodore Users Group. Meets second Wednesday of the month at Patrick Henry Junior High on Louise Ave. between Devonshire and San Jose in Granada Hills, near 118/405 freeway interchange. Contact Tom Lynch, 21208 Nashville, Chatsworth, CA 91311, (818) 709-4736.

San Luis Obispo Commodore Computer Club 1766 9th St., Los Osos, CA 93402. (805) 528-7475 BBS.

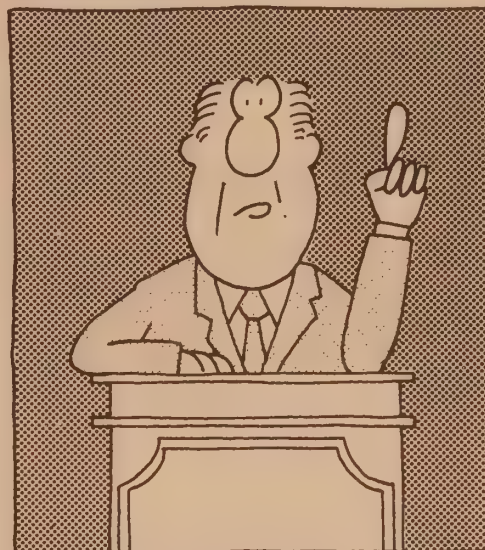
The Commodore Users Group - San Juan Capistrano. This group of C64 users meets the second Saturday of every month from 9:00 am till 12:00 at Great American Federal Savings and Loan, 32232 Camino Capo, San Juan Capistrano. For info call 496-5745.

Orange County Commodore Technical User's Group C-TUG. Orange County's Commodore user group. Club newsletter, two 300/1200 baud BBSs, door prizes, SIGs in Comal, DOS protection, data bases, wpros, and BASIC. Custom software and ROM chips, and just plain good times. Meetings at Mercury Savings and Loan, 4th and Newport, Tustin, fourth Sunday of the month, 10:30 am. Contact Ellis L. Higham, corresponding secretary, P.O. Box 8342, Orange, CA 92664, (714) 554-9222.

Hollywood User Group (HUG) for Commodore computers. Meets 2nd Saturday of the month at Plummer Park, Conference Room, 7377 Santa Monica Blvd., West LA at 12 noon. Contact HUG BBS (213) 874-8256 (24 hrs) or write HUG, P.O. Box 38313, Hollywood, CA 90038.

Southern California 64 Users Group. Learn more about your Commodore 64. Extensive public domain disk library. Meet at Mid Cities Bank in Gemco shopping center on Bellflower,

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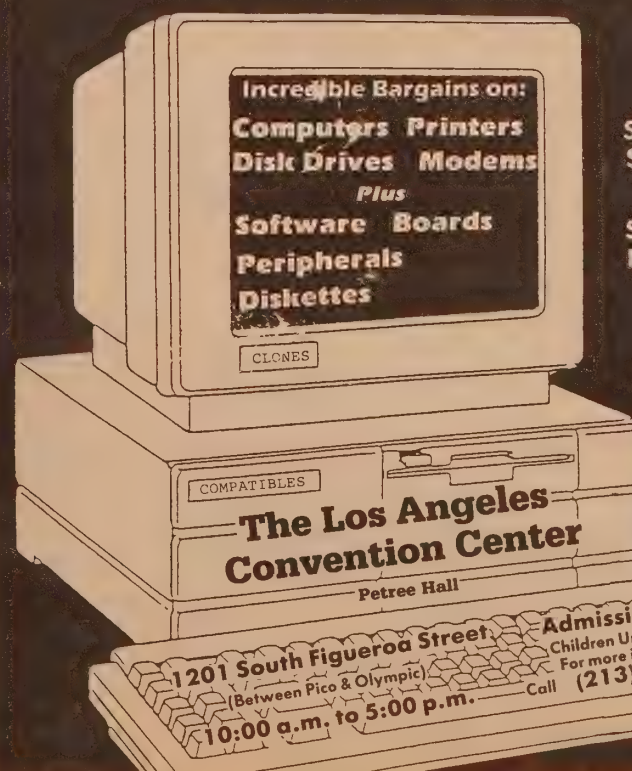
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TOSHIBA 3.5" 720k drive kits	\$ 149.00
SEAGATE HARD DISKS	CALL
PARCO monochrome monitor 12" w/tilt swivel (green or amber)	\$ 90.00
PARCO monochrome monitor 14" w/tilt swivel (green or amber)	\$ 110.00
PARCO monochrome monitor 14" flat screen (Black and white)	\$ 180.00
PARCO color monitor (CGA)	\$ 265.00
PARCO EGA monitor (EGA)	\$ 355.00
C.I.TOH EGA color monitor (EGA & CGA autoswitch)	\$ 365.00
Monochrome Graphics Card w/printer port	\$ 60.00
Color Graphics Adapter	\$ 53.00
EGA Card	\$ 169.00
AT style keyboard	\$ 60.00
AT enhanced style keyboard	\$ 85.00
CITIZEN 120d dot matrix printer w/near letter quality mode	\$ 190.00
CITIZEN MSP10 dot matrix printer w/near letter quality mode	\$ 260.00
CITIZEN PREMIER 35 daisy wheel printer (Diablo 630 compat.)	\$ 489.00
OKIDATA PAGELASER w/parallel adapter, toner cartridge	\$ 1495.00

APPLIED BUSINESS CONCEPTS

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(213) 539-0830

just south of 91 Freeway, 7 pm, 3rd Tuesday of every month. Contact Joe Allain, 3852 River-ton, Studio City, CA 91604, (818) 985-2647.

C-128 West UG. User group for owners of the Commodore C128, from beginner to advanced; PD software available. New group still assessing the needs and interests of members. Intend to network with other user groups on C128 software. Meetings 2nd Tuesday, 7:15 pm, McKinley School in Santa Monica, Santa Monica Blvd. and Chelsea. Contact Don Campbell (213) 828-9308.

Inland Empire IBM/C64 User Group. Major subjects are local area networks, small business software, data communications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino Ca 91708-0988.

Commodore Creations Users Group (CCUG). We offer library, newsletter, and other services; upcoming BBS; soon to be member of Commodore World. Meets 2nd or 3rd Sunday of each month 2-4 pm. Membership dues \$26 per year. Call or write for info: Brian R. Klotz, 1135 Coronet Ave., Pasadena, CA 91107 (818) 351-8198.

Back-Country Commodore Club. Meets first Thursday 7 pm, Ramona Lutheran Church on 14th St. Check us out for relaxed, informative group discussions. We're here to help those with problems and to promote better uses of Commodore 64s, 128s, and Amigas. Contact Gerry White at (619) 789-3209, 511 14th St. #D-13/P.O. Box 373, Ramona, CA 92065. Meetings at 617 16th St., Ramona, CA 92065, 7 pm, 1st Thursday each month.

General Dynamics Commodore Computer Club. Meets third Tuesdays, 4:30 pm, Con-vair Rec. Assn. room C. Commodore 64 and 128 only. Contact Al Wilson, (619) 429-6790 for information.

C.U.B.E. Commodore Users, Buffs, and Enthusiasts meet first and third Mondays of each month, 7:30 pm, East Side Christian Church, 668 Obispo, Long Beach. Contact Ted Lynch, P.O. Box 20288, Long Beach, CA 90801. (213) 435-4815.

Com-Pacs. Meetings and/or copies of public domain software and discussion of problems. New computer C64/128 technologies. Sales and swaps of equipment. Meetings at 2354 Elmgrove St. Los Angeles, CA, Saturdays, 3 pm. Contact Lon Damiani, (213) 222-2277.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

Pacific Computer Club (Commodore). Meetings 391 S. Madison, Pasadena, 2nd Thursday, 7 pm. Contact Norman Sauppe, (818) 792-9840.

FCUG/SixtyFour. PD library, newsletter, meeting 3rd Saturdays, 8:30 am. Contact George Bearden, P.O. Box 16098, Fresno, CA 93755, (209) 291-7053. BBS (209) 431-6288.

Central Coast Commodore Users Group. Meets 3rd Tuesday of each month. Contact Gilbert Vela, 4237 Plumeria Ct., Santa Maria, CA 93455. CCCUG BBS (805) 934-2216, 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads.

Diamond Bar User Group (DBUG). The Diamond Bar User Group is dedicated to the Commodore line of computers, C64, C128, and the Amiga. The club has a large public domain software library base, especially Commodore CP/M. Free raffles, technical discussions, software demonstrations, and the monthly freebie disk can be found at most any meeting. Meetings 2nd and 4th Wednesdays, 7 pm, Diamond Bar Library, 1061 S. Grand Ave., Diamond Bar, CA. Contact David Dietzel, (714) 947-1882 for more information.

South Orange County Commodore Programmers and Users (CPU). Meetings at Great American Savings, 23688 El Toro Road, El Toro, third Saturdays, 9 am. Contact Don Gribble, President, 25401 Champlain Rd., Laguna Hills, CA 92653, (714) 830-2430 or (714) 855-8320.

West Orange County Commodore User Group. Meetings 1st Sundays, 1 pm, Mercury Savings, Buena Park, corner of Valley View and Lincoln. Write for info: P.O. Box 6441, Buena Park, CA 90622; or call Mark Stanford, (714) 772-4182 or Art Collins (714) 821-0195.

Bits & Pieces Amiga Group of Anaheim. Meets every Tuesday 6:30-10 pm at 1130-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, DOS classes, technical help, guest speakers, newsletter and much more. IBM group meets first and third Saturdays of the month at 10:00 am to 2:00 pm. Sponsored by Transnational Electronics. Contact John Callaci or Mike Dalton (714) 630-8644/630-8711 for information. BBS: (714) 630-5619.

The Pasadena Commodore Computer Club meets the first and third Wednesday of the month at 7 pm in the Circadian Room of the cafeteria on the campus of Pasadena City College, SE corner of Colorado and Hill. For more information write to PCCC, P.O. Box 1163, Arcadia, CA 91006, or call (818) 447-2212 after 2:30 Pacific time.

Osborne Computer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00-10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Commodore Helpers User Group Of Long Beach (CHUG). Meets second Saturday of each month, 9:00 am to 12:00 noon at Mercury Savings Bank, 4140 Long Beach Blvd. Dues \$12.00 a year. Visitors and families welcome to attend. Support the C64, C128 and Amiga. Q-Link, SIG and more. Newsletter distributed at meeting. Demos and more. We welcome people who need help with their Commodores. Free disk for members at each meeting. Soon to come: area BBS for users and professional software demos. If you have any questions call Rodney Hayes, president, at (213) 863-8420, from 6:00 pm to 10:00 pm, M-F.

Success. Commodore group meets at 18th and Oak, Paso Robles, CA on the second Tuesday of the month at 7:00 pm. Contact Wayne Weichel (805) 238-6294 for information.

East County C64 Owners (ECCO). Meets at Coleman college in San Diego at 7:00 pm on the first and third Fridays of the month. Contact Gary Bell at (619) 561-4245.

CORDATA

Cordata Users Group. Meets 2nd Fridays, 7 pm. 20630 Lassen St., Chatsworth. Contact Alicia Fahey, (818) 709-6202 for information.

CP/M

CP/M SIG. Meets first Sunday of the month, 10:30 am, at Chapman College. Contact Barry Cole (213) 390-3851. BBS: (714) 998-8080.

DEC

DECUS Inland Empire PC-LUG Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software/applications assistance available; FIDO bulletin board. Meets Cal Poly-Pomona campus, Li-

brary Bldg 15, Room 12, 7:30 pm 3rd Tuesday of each month. Contact Jan Snyder, 380 Verona St., Upland, CA 91786, (714) 620-7511 ext. 4376.

DECUS Southern California PC-LUG. Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software/applications assistance available; FIDO bulletin board. Meets 10:30 am, 1st Saturday of the month, Press Telegram Bldg., 3rd Floor, 604 Pine Ave., Long Beach, CA. Contact Bill Davis, 1457 W. 219th St., Torrance, CA 90501. (213) 827-4600.

DECUS Rainbow Pacific PC-LUG Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software/applications assistance available; FIDO bulletin board. Meetings at Digital Equipment Corporation, 6101 W. Centinela Ave., Culver City, CA 90230, 7 pm, 2nd Wednesday of each month. Contact Don Braums, 3312 Summertime Lane, Culver City, CA 90230, (213) 202-1784.

EASYBUSINESS

Easybusiness Systems Users Group. CPAs, Consultants, and other business people interested in Computer Associates Easy-business Systems' Accounting Software. For information, contact Gary Robinson (213) 398-6544.

EPSON

Cursor Club Epson 402 W. Arrow Highway, Suite 6, San Dimas, CA 91773. (714) 559-8361, Bulletin Board: (714) 592-6316.

San Fernando Valley Epson User Group. Meetings at Fallbrook Square Community Room "The Meeting Place" off the Food Court in the new Fallbrook Mall, 6633 Fallbrook Ave., Canoga Park, between Victory and Vanowen. Meets 3rd Wednesday of each month at 7 pm. Contact Pat Denslow, (818) 881-4029 for information.

Epson Users Group of Orange County. 6075 Jeffrey Mark St., Cypress, CA 90630, (213) 414-4817.

Epson Users of San Diego. P.O. Box 87448, San Diego, CA 92138, (619) 560-7604.

High Desert Epson Users Group. 933 Cottonwood Drive, Barstow, CA 92311, (619) 256-3541.

PSC/QX. 2934 Wilshire Blvd., Santa Monica, CA 90403, (213) 453-4535, Bulletin Board: (213) 474-4952.

South Bay Epson Users Group. 1115 Cerise Avenue, Torrance, CA 90503, (213) 328-9916, Bulletin Board: (213) 618-1940.

Epson Computer Club of America. Monthly meeting 2nd Saturday of the month at 10 am, Mercury Savings and Loan, Irvine Blvd. one block east of Newport Ave. Messages Epson West Bulletin Board (714) 630-7104 User area B:15. Monthly newsletter "The Help Key." Contact Roy Boorman, 4021 Winterhaven St., Yorba Linda CA 92686, (714) 524-9483.

Epson User's Group of Orange County. Meets on 3rd Saturday of the month from 10 am to 12 noon at 2111 Main Street, Huntington Beach, CA 92648. Contact Richard A. Petersen, 7282 Mast Dr., Huntington Beach, CA 92646. (714) 536-6979.

FORTH

FORTH Interest Group, Los Angeles Chapter. Meets 4th Saturday, 10 am, Hawthorne Public Library, 12700 S. Grevillea, Hawthorne. Contact Phil Wasson (213) 649-1428.

FORTH Interest Group, Orange County Chapter. Meets 1st and 4th Wednesdays, 7 pm. Call Noshir Jesung for info. (714) 842-3032.

FORTH Interest Group, San Diego Chapter. Meets weekly, Thurs., 12 noon, contact Guy Kelly (619) 268-3100 ext. 4784.

HEATH

Los Angeles HUG (Heath Users Group). A support group for users of Heath/Zenith computers. Monthly speakers, software library, information exchange, newsletter. Meetings open to visitors. Meetings at 2309 S. Flower St., LA 90007, first Thursday of each month at 7 pm. Call Tom Davis for information at (213) 462-2642.

LUV-A-HUG Heath /Zenith User's Group. Meets 2nd Thursday of each month, 7pm, at Heath /Zenith Computers and Electronics, 22504 Ventura Blvd. Woodland Hills, CA 91364. A users group dedicated mainly to the Heath/Zenith line of computers, but anyone interested in computing is welcome. Dues are \$12/yr, which includes group newsletter and copying of public-domain software from extensive library of PC-, Z-100, and CP/M compatible software. For more info contact John Rotondi, between 10:00 am and 6:00 pm at (213) 874-9344. BBS (818) 772-0384.

HEWLETT-PACKARD

Club of Hewlett - Packard Hand-Held Users (CHHU). HP handheld users worldwide support CHHU as a noncommercial, open, independent club dedicated to applying today's machines and making a contribution to the true personal computer of tomorrow. Send SASE for more info to Richard J. Nelson, 2545 W. Camden Place, Santa Ana, CA 92704, or call (714) 754-7757 for meeting directions.

LA-SCRUG. Hewlett - Packard Series 100 business computer user group. Demonstrations and seminars on HP software and equipment. Meetings at 5161 Lankershim Blvd., North Hollywood, 7-9 pm, 2nd or 3rd Thursday of the month. Contact Dave Mark, P.O. Box 60975, Pasadena, CA 91106, (818) 794-4969.

Hands-On Computer User Society (HOCUS). Meets the 1st and 3rd Thursday of the month, 6:30 pm, at 473 E. Colorado Blvd. Pasadena, 91101. Informal, hands-on problem-solving using various HP personal computers. Contact Dale Thorn c/o Logic Tree Computer Center, 463 E. Colorado Blvd., Pasadena 91101. (818) 440-9279.

IBM

The Greater South Bay IBM PC Users Association. Any L.A. area PC or compatible owners are welcome to attend these meetings at the TRW cafeteria on Compton Blvd. Meeting time is 7:00 pm on the third Thursday of each month. For info call (213) 532-2123.

Technical Users Group (TUG-NET). For CP/M & MS-DOS PC users. Meets on the first Thursday of each month at 7:00 pm. Valley Plaza Park, Community Room, 12240 Archwood St., North Hollywood, CA. Contact Mike Faith - (818) 994-6567. DOS SIG meets 3rd Mondays, 7 pm, Sears S&L, Van Nuys. Call (818) 701-0512 for information. BBS (818) 882-6045.

UCLA PC Users Group. IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library, SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

Pasadena IBM User's Group. Meets 3rd Wednesday of each month at Cal Tech, Bridge Building, Room 201. For more info send SASE to Steve Bass, 711 E. Walnut Street #306, Pasadena, CA 91101, (818) 795-2300.

Inland Empire IBM/C64 User Group. Major subjects are local area networks, small business software, data communications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino Ca 91708-0988.

The Foothill Computer Club. An IBM-PC users group. CCCUG - Crescenta-Canada-Compatible Users Group. P.O. Box 1265, La Canada, CA 91011, (818) 790-6672. Meetings 1st Wednesday of the month at

6:30 pm at the Glendale Federal Bank, 2350 Honolulu, Montrose, CA. For newsletter send SASE to above address.

NOCOC Lotus & Business SIG. Subgroup of North Orange County Computer Club. Meets first Sundays at Chapman College in Orange, CA, 11:15 am. Lotus 1-2-3 and business application demos, speakers. Call to verify dates, address: Vance Joachim, (714) 998-8080, P.O. Box 3616, Orange, CA 92665.

The Riverside IBM Computer Club. Meetings at Computerland Riverside, Monday 7 pm. We specialize in software demonstrations, sharing of public domain programs, and mutual problem solving activities. Contact Jimmie E. Heidecke, (714) 685-5407 for info.

Orange Coast IBM PC User Group. A not-for-profit organization open to anyone with or considering the purchase of an IBM PC or compatible computer. Monthly meetings, usually on the last Saturday of the month, consist of one or two guest speakers, a short business session and a period for random access. OCIPUG has public domain and user supported software, a monthly newsletter and a bulletin board. Membership is \$20 per year. Meetings at Orange Coast College, Science Hall, Costa Mesa, last Saturday of the month, 9 am-12 noon. Contact Tom Sutro, P.O. Box 6100-211, Costa Mesa, CA 92628, (714) 850-0474.

Valley Computer Club. IBM PC Users Group meets first Wednesday each month. The group is part of Southern California's original computer club. Its purpose is to distribute public domain software and exchange info on the PC. Meetings at 2006 W. Magnolia Blvd., Burbank, 7 pm. Contact Aaron Epstein (818) 769-1837.

Kern Independent PC User Group (KIPUG). Meets the 2nd Thursday of each month beginning at 7 pm at the County Superintendent of Schools Boardroom, 5801 Sundale Ave., Bakersfield. Contact Jim Harter, P.O. Box 2780, Bakersfield, CA 93303, (805) 395-0223.

Bits & Pieces IBM of Orange County. Meets at 1130-A N. Kraemer Blvd., Anaheim, every Saturday at 10 am. Call John, (714) 630-8644 for more information.

Ventura Personal Computer User's Group. All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. contact Mike Regan, President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

Thousand Oaks Personal Computer Club (TOPCC). Meets fourth Thursday, except November and December (3rd Thursday), at CAL Lutheran Univ., 60 W. Olson Road, Thousand Oaks, 6:30 pm beginners, 7:30 regulars. Group is five years old and has approximately 150 members. Contact Bob Tracy, (805) 482-7092 for more information. BBS: (805) 499-8378.

Southwest PC Users Group. All computer users are welcome. Meetings 3rd Saturday of each month; call for meeting place. Christine Tripp, (213) 935-4105.

Tulare County PC. Meetings at Genesis Computers, 3rd Thursday each month. Call Roger Jenan, (209) 733-8204 for information.

Claremont Computer Club. This club is for any interested IBM PC or compatible users. Meetings start at 7:30 pm on the 3rd Monday of the month. Call (714) 626-2268 for meeting location and information.

Apple/Valley Computer Club. Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

Osborne Computer Owners Klub (OKOK) is a microcom-

puter user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00-10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Pasadena IBM PC Users Group. Meets third Wednesday of each month at Cal Tech Bridge Bldg., Room 201. Contact Steve Bass, 711 E. Walnut Street, Pasadena, CA 91101. (818) 795-2300. Send SASE.

Long Beach IBM Users Group. Meets second and fourth Wednesday of each month at 4601 E. 2nd Street, Belmont Shores. Contact Noel Roberts, president, 153 Argonne Ave., Long Beach, CA 90803. (213) 438-6515.

KAYPRO

Lakewood/Long Beach KUG is a group of Kaypro computer owners dedicated to helping each other solve problems and share information and public domain software. The meeting is open to all. Meetings at Midcities Bank, 9025 Artesia, Bellflower, CA, 2nd Wednesday of each month; 7 p.m. Contact Melvin Pasley, 4566 Shadeway Rd., Lakewood, CA 90713, (213) 421-3094.

Kaypro UG, 3134 N. Palm Shields, Fresno, CA 93704.

K-West, Orange County Kaypro users group. Meetings 2nd Monday of the month, Glendale Federal Savings, 100 Newport Center Drive, Newport Beach.

Club 16. Meets once a month in Costa Mesa at 2790 Harbor Blvd., (CBS Store) to share knowledge of the 16 bit world. It is a small group so that everyone can get to know each other and share. Large public domain library. Contact Peggy Lloyd, (714) 645-9868 for information.

LA Kaypro Users' Group. Primarily CP/M users, all brands welcome. Meets 3rd Tuesday, 6:30-9:30, Beverly Hills High School, 241 Moreno Ave., 3rd floor cafeteria, near Olympic and Spaulding. Contact Allyn Franklin or Barry Cole, (213) 278-3748 or (213) 390-3851 after 11 am please.

Kayos Kaypro Users Group. Kayos Kaypro User Group invites Kaypro and CP/M users to meetings at TRW in Redondo Beach, 6:30 pm, third Monday of the month. (213) 379-8339 for details.

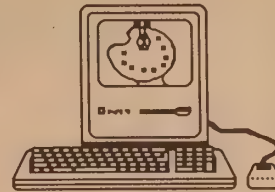
TUG-NET Kaypro and Osborne SIG meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. Call (818) 882-1693 for information.

Osborne Computer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00-10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Kaypro SIG. Meets on the first Sunday of the month, 1:30 pm, at Chapman College. Contact Tom Gramafa (714) 995-9227. BBS: (714) 998-8080.

LEADING EDGE

OCTIPUG-SIG. Forming Leading Edge user's group. Will organize to teach DOS, Framework, d-BASE III, utilities and public domain software. Meeting times and address to be announced. Contact Michael Banyacki, 24992



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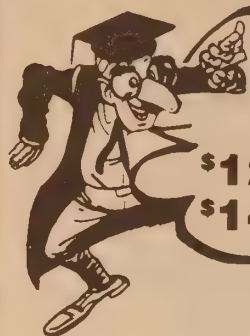
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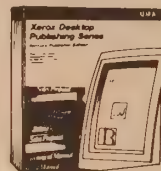
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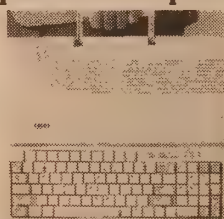
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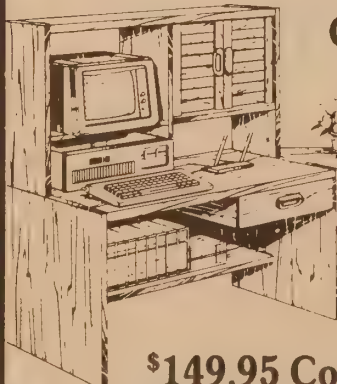


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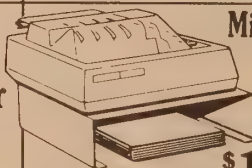
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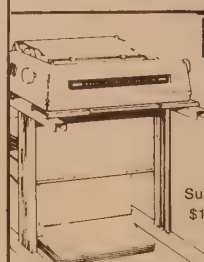
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278-LAMG for information.

Ventura County Macintosh
Club Mac and Lisa users invited.
Membership \$21/yr.; newsletter,
software library, discussions and
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CA 93031, (805) 983-1610, (805)
499-2824.

Mac Valley Users Group. For
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too can enjoy meetings chock
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entations, public domain soft-
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School Cafeteria, Burbank Blvd.
at 3rd St., Burbank, CA, third
Tuesday of the month, 7:30
p.m. Contact Ruth Stever, P.O.
Box 4297, Burbank, CA 91503,
(818) 848-1277.

MAC-HACers. Macintosh com-
puter club for Hughes Aircraft
employees only. Meetings 3rd
Wed. each month, H.E.S.E.A.
Club House, 1216 Imperial, El
Segundo, CA 90745, across
from LAX, 5 pm. Contact Bud
Grove, (213) 606-2212, 5am-
3pm, (213) 549-9664.

Orange Apple Macintosh
Group. The Macintosh Meeting
of the Orange Apple Computer
Club meets 1 pm-4 pm the 1st
Saturday of each month in the
Science Hall at Orange Coast
College, Costa Mesa. We have
the best of the public domain
software for the Mac, and sev-
eral fun special interest groups
which include Fast Start, Mac
Modem, and Deciphering Mac
Public Domain. For further info,
call (714) 770-1865.

Mac Orange. Monthly news-
letter, special interest groups,
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son Center, Santa Ana College,
Bristol at 17th. Novices SIG
meets at 7:00. For info write
Box 1830, Santa Ana, CA 92701,
or call (714) 542-9753.

MacBuddhist. Learn about
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sharing material crossing sec-
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Write: 2605 N. Beachwood
Drive, Los Angeles, CA 90060,
(213) 464-3599.

Corporate User Groups SIG
of Los Angeles Macintosh
User Group establishes com-
munication between leaders of
Macintosh User Groups of com-
panies in the greater Los An-
geles area. The main purpose
of the group is to share infor-
mation on Macintosh use in
corporations. It also consults
company recreation clubs in
starting and supporting com-
pany Macintosh groups. Con-
tact Charles Shipp, (213) 970-
6300w, (213) 833-9186h, for
more information.

San Gabriel Valley Mac Users
Group. Meets once a month to
disseminate information about
the Macintosh. Meetings are
held on the first Thursday of
every month at the City of
Hope in Duarte, 7:30 pm in
cafeteria complex Room B.

The SGVMUG has special in-
terest groups such as Power
Users' SIG and a Novice SIG.
Public domain library, monthly
newsletter. Membership is \$20
per year. Contact Frank Chavez
on the 24 hour information line
(213) MUG-ICON, or write
SGVMUG, P.O. Box 792, Sierra
Madre, CA 91024.

Macintosh Computer Society.
General meeting on the 1st
Thursday of each month at 23
Civic Center Drive, Northwest
corner of Santa Ana Blvd. and
Rose Street. Meeting time 7:30
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meetings on the 2nd and 3rd
Tuesday of each month at
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For further info, call Robert at
(714) 840-1238 or mail to 17661
Falkirk Lane, Huntington Beach,
CA 92649.

Rockwell International Mac-
intosh Users' Group (RIMUG).
Meets 1st Tuesday of each
month 12 noon at 2770 E.
Carson St., Lakewood, CA. Al
Necersian, president. 8511
Beverly Pl. Pk., Pico Rivera, CA
90660, (213) 420-4819.

MORROW

West LA Morrow User's Group
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dicated members, with special
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1833 Franklin Canyon Dr., Be-
verly Hills, CA. Meetings 2nd
Wednesday of the month.

LA Morrow User Group. Meets
3rd Thursday each month, North
Hollywood Recreation Center,
11430 Chandler Blvd., North
Hollywood. Contact Jack Byers,
(818) 347-7283 for information.

NEC

Orange County NEC Users
Group (OCNUG). Dedicated to
NEC-APC computers, CP/M-86
& MS-DOS. Always room for
any experience level. Meets 3
pm, third Saturday of the month.
6642 Lenore, Garden Grove.
CA 92645. Call John Bingel at
(714) 897-7656 for more info.

The Los Angeles Area NEC
APC Users Group meets on
the first Saturday of each month
at 3 pm at the I/O Interface
Computer Mart, 6241 West 89th
St., Los Angeles, CA 90045.
Telephone (213) 410-9824. There
is no meeting in January, and
occasionally a meeting may be
cancelled or postponed, so it is
best to call before coming.

NETWORK

Orange County Network Users
Group (OCNET). All users, con-
sultants and business people
interested in learning and shar-
ing information about Network
are invited to join. We're now
meeting on the second Monday
of each month at First Ameri-
can Title, Santa Ana, CA. For
more information call Mark at
(714) 955-0616.

OLIVETTI

Olivetti PC User Group form-
ing. Send SASE to Stan Cory,
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Malibu, CA 90265, or call (213)
457-3879.

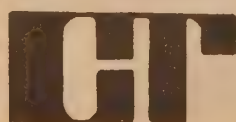
OMNIS 3

Omni 3 User Group. Meets
every third Wednesday of the
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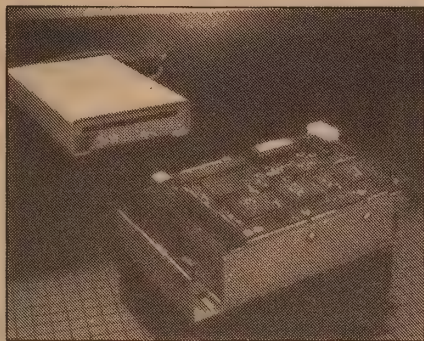
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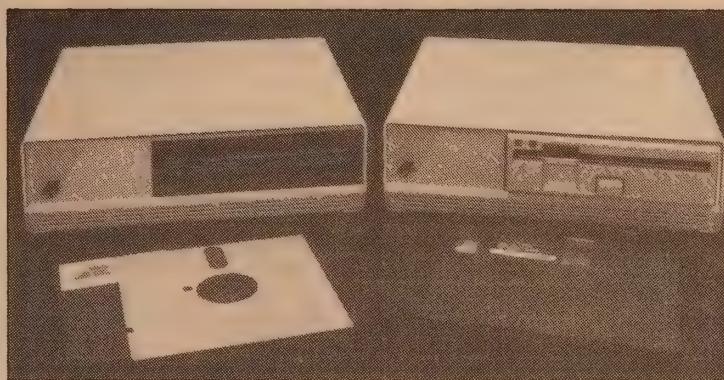
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OSBORNE

TUG-NET Kaypro and Osborne SIG meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. BBS (818) 882-6045, 8-N-1, 1200 baud, 24 hours.

Osborne Komputer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00-10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Osborne National Users Group meets 2nd Fri./mo. at 7:30 pm at Wizard of Oz, 20630 Lassen St., Chatsworth, CA 91311. Contact Art Schiefstein, (818) 709-6969.

PARADOX

Southern California Paradox Users Group. Anyone with an interest in the relational database Paradox please send an SASE to Brian Smith, 350 Palos Verdes Blvd., Redondo Beach, CA 90277. Meetings are being held in LA and Orange County.

RADIO SHACK/TRS

South Bay Color Computer Club TRS-80, TDP-100, Dragon. Meets third Friday of the month at Mercury Savings, 22939 Hawthorne Blvd., Torrance. Info: Andrew Corlett, 1435 W. 172nd St., Gardena, CA 90247. (213) 538-8394.

OCTUG-Orange County TRS-80 Users Group. Meets the 3rd Sunday of each month in the community room at "The City Shopping Center" in Orange. The room is near the green entrance of the mall (N.E. corner). MS-DOS SIG (Special Interest Group) begins at 11:30 am. General meeting begins at 1:30 pm. Devoted to the Tandy line of computers and compatibles. Come on down and see what it's like. For more info, contact Franco Collino, (714) 750-0887.

San Gabriel Valley TRS-80 Users Group. Supporting users of TRS-80 and Tandy computers. Meets 2nd Friday of each month at Arcadia Park Senior Citizens Center at 7:30 p.m. Monthly newsletter, various SIGs, lotsa fun & info. Contact Dan Dreselhaus, (818) 914-5831 days.

VTUG (Valley TRS-80 User Group). Devoted to users of TRS-80 Model I, II, 4, 4P, LNN or MAX-80. Speakers, presentations, raffle drawing, refreshments. No admission or membership fee, new members welcome. Meetings at Glendale Federal Savings, 7129 Topanga Canyon Blvd., Canoga Park, 3rd Thurs., 7:30 pm. Contact Fred Blechman, (818) 346-7024.

VTHG Valley TRS80 Users Group. Meets first Friday of the month at 7:30 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. One block south of Vanowen St. Four blocks west of Laurel Canyon Blvd. RAM SECTION, bring all the questions, ideas and information that you have and share them. ALSO, don't forget to bring your blank diskette to exchange for the new club disk-from Eric. For more information call (818) 982-0467 or write P.O. Box 9747 North Hollywood, CA 91609.

COCO 1-2-3, Color Computer, Models 1,2,3. Meets second Friday of the month at 7:30 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. One block south of Vanowen St. Four block west of Laurel Canyon Blvd. RAM SECTION, bring all the questions, ideas and information that you have and share them.

ALSO, don't forget to bring your blank diskette to exchange for the new club disk from Paul For more information call Harry Tischler (818) 997-6000 or write 7560 Woodman Pl. No. E8 Van Nuys, CA 94105.

Tandy 1000 (The MUG) Meets fourth Wednesdays, 7 pm, 9027 E. Artesia, Bellflower, CA. Contact Dick Sherwood, 4014 Centralia St., Lakewood, 90712, (213) 421-4014. The MUG RBBS (213) 425-0022, members only.

Color America. Radio Shack color Computer SIG meets 2:30-5 pm on the third Saturday of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. Contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

The Los Angeles-Wilshire Color Computer Users' Group, a TRS-80 Color Computer Users' Group, meets the 2nd Saturday of each month, 12:30 pm-5:30 pm in the Felipe de Neve library's community room, 2820 W. 6th, Los Angeles. Call Milton, (213) 558-4909.

United Computer Federation-San Fernando Valley Chapter. Meets the fourth Tuesday of each month at the Tarzana Radio Shack, 18545 Ventura Blvd., 1/2 block west of Reseda Blvd. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Pete Ellison, chapter president, at (818) 840-8902.

United Computer Federation-Los Angeles Chapter. Meets the fourth Thursday of each month at the Church of Christ recreational building, corner of Clark and Park streets, just off the 91 freeway in Bellflower. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Gary James, chapter president, at (213) 420-7632.

United Computer Federation-Orange County Chapter. Meets the second Sunday of each month at the Mercury Savings building on Edinger Ave., 1 block north of Beach Blvd. in Westminster. Meeting starts at 1:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Allen Nedrow, chapter president, at (213) 692-3073.

SBT

The Orange County SBT Users Group is being formed and is seeking members who are interested in an atmosphere that promotes the better understanding and more efficient use of the SBT Accounting Software. Contact Jay Rubin, P.O. Box 5145, Newport Beach, CA 92662, (714) 720-8171.

SANYO

Sanyo-MS/DOS Table Top Computers, 14717 South Prairie Ave., Lawndale, CA 90260. (213) 679-1151.

Zenith-Sanyo Users Group meets 10 am every first and third Sunday at 401 S. La Brea Ave., Inglewood, CA 90301. Call Alan Gillen, (213) 674-0318 for information.

Sanyo Users Group of LA (SUGLA). Devoted to users of Sanyo MBC 550/555 micro business computer. Guests welcome. Dues \$15/yr. Speakers, presentations, public domain software library, information, new hardware and software reviews. Meetings 2nd Wednesdays, 7 pm, CAL State University, LA, Student Union (Bldg. #5), 4th floor in South Pasadena Room. Contact Fred Blechman, (818) 346-7024.

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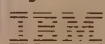
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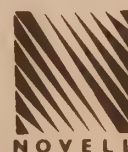
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The TI-99 Club. Yes, there still are a lot of 99's and 99/4a's around. If you own one, then get in touch with these people. They have good info for TI owners. Meetings take place at the Westminster Community Center on the third Thursday of every month at 7:00 pm. For info, call (714) 842-0859.

TI-West (Los Angeles West Side Area). Meets at DeCoursey Engineering Laboratory, 11828 W. Jefferson Blvd., Culver City, on the 3rd Monday of each month. For information, contact Lew Howard at (213) 397-9668.

San Gabriel Valley TI 99/4 Users Group meets 1st Wed./mo. at 6:30 pm in the Covina Parkway, West Covina, CA. Contact Tom Padilla, (213) 330-8240.

TI Riverside UG. Supporting the TI 99/4A. Meetings at Collett School, 3rd Thursday, 7 p.m. Contact Ed Butcher, 3523 McKinley St., Riverside, (714) 686-0336.

San Fernando Valley TI 99/4A User Group. Library, Workshops, Newsletter, How To? For further information call Jim Edwards, (818) 248-9558, 5-10 pm. Meetings 2nd Wednesday of the month, 7:30 pm, Doctor's Conference Room, Sherman Oaks Community Hospital, 4929 Van Nuys Blvd.

Antelope Valley TI UG. TI User Group. Meetings at Palm-dale Culture Center, 3rd Wed., 7 pm. Contact Len Rouw, 38540 26th St. East, (805) 947-6270.

El Toro 99 Home Computer Users Group. The ET-99 Home Computer User Group meets to demonstrate programs, equipment, and discuss techniques. Contact Ken Baldwin, 23065 Sonoita, Mission Viejo, CA 92641, (714) 855-0480. Meetings at Mercury Savings and Loan, 1-5 and Lake Forest, El Toro, 2nd Saturday of each month 9 am - 12 noon.

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BUG (Brea 99er's Users Group). Meets the first Monday of the month at 7:30 pm at the Western Federal Savings meeting room, #10 La Habra Fashion Square, corner Beach and Imperial, in La Habra. For further information call Bob August at (714) 871-3405.

San Fernando Valley Texas Instruments Professional Computer User Group (SFV TI-PRO USER GROUP). Meets at 9017 Reseda Blvd. Suite #212, Northridge, on the 3rd Sunday of each month at 10:00 am. We serve the entire San Fernando and Santa Clara Valleys. Group meets to discuss: how-to techniques, programs, equipment and software. All are welcome—bring a friend. TI-Pro/AutoCAD Users are also welcome. For more info, contact Marcus Swed at (818) 993-3151 during the day and at (818) 366-0886 evenings.

The Pomona Valley 99ers Computer Users Group. Meets locally every month on the second Monday of the month. Anyone interested in home computing is welcome to come to our meetings at 7:00 pm. We meet at the Cortez Elementary School at 12750 Carissa Ave., Chino, which is south of the Pomona Freeway and west of Mountain Ave. There are demos of hardware and software. Mostly for the Texas Instruments 99/4A computer. Lots of discussion. We try to educate and stimulate interest in computer literacy and programming. If you become a member of this non-profit group you'll get a monthly newsletter and be able to get copies of the programs in the large club library of public domain software.

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Timex-Sinclair. South Bay and West Side groups. Call John W. Petersen at (213) 545-9581 anytime or Dr. George Kuby (213) 201-2014 after 3 pm for more information.

TOMY

Tomy Tutor computer user group. Contact Eugene C. Dinovo, P.O. Box 37, Sepulveda, CA 91343.

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West Los Angeles Victor Users Group (WLA-VUG). Victor 9000 users - you are not alone! Meet other users. Free V9000 software & purchasing discounts for members. Victor-specific bulletin board (818) 989-2216. Meetings at 8651 Olin St., LA 90034, 7 pm, 3rd Thursday, every month except December. Contact Roger Goodman, (213) 558-8363.

Orange County Victor 9000 User Group. Meets fourth Wednesday of the month at Mayward Siler & Assoc., 12062 Valley View, Suite 210, Garden Grove, CA 92645. Contact Don Henderson, 1201 Drayton Way, Tustin, CA 92680. Phone: (714) 730-6015.

WANG

Wang WP Users Group. Meets 4th Thurs. of each odd month, 6 pm. Newsletter, speakers, information network. Call for meeting place: Steven Hirsch, (213) 255-5515, or write 2858 El Roble Drive., Los Angeles 90041.

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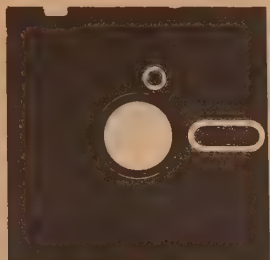
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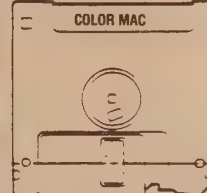
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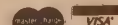
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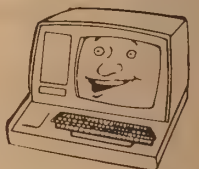


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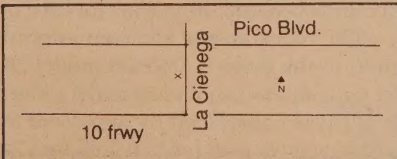
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DVORAK'S LAST COLUMN



Momma, Momma, I Want To Be A Vertical Market Specialist When I Grow Up

By John C. Dvorak

Over the years I've had more than a few friends tell me about the gold in them thar hills. The Hills are those fancy vertical markets where millions are to be made. Easy pickin's, they all say.

Over the years I've noticed that no mountain of gold has been found. The hills contain no gold, no silver, no quick and easy buck. No nothing. The idea of selling vertical market software stems from the idea that the vertical market is starved for software. And people who get into the vertical markets *do* seem to make a good living — for awhile.

What's a good example of a vertical market product? In Berkeley you can go to Front Row Video and see a nifty vertical market application that consists of a PC hooked to a network, running specialized application software to make the store efficiently check video tapes in and out using bar codes. That's a vertical market application. It amuses me how the place has all this computer paraphernalia and still turns out to be the most expensive rental place in the area. I guess someone has to pay for the computers.

My take on vertical marketing is simple. It's boring. Who cares about selling a specialized general ledger and inventory package into, say, kid's shoe stores? What a life.

The classic vertical market story is in a business that historically parallels and predates the computer industry — the automobile industry. We study it and we see our future.

The most obvious vertical market for the automobile manufacturers is the big city cab. The ver-

My take on vertical marketing is simple. It's boring. Who cares about selling a specialized general ledger and inventory package into, say, kid's shoe stores? What a life.

tical market specialist is the Checker Motor Co. in Kalamazoo, Michigan.

Checker has its roots in a 1908 two-cylinder high wheeler called the "Seven Little Buffalos," produced by a hacker named William A. Schaum. It seemed like this car was reliable enough to keep Schaum in business and evolve his little company into the De Schaum Motor Car Co., then into the De Schaum-Hornell Motor Car Co., then the Suburban Motor Car Co. to the Palmer Motor Car Company to the Partin-Palmer Motor Car

In Berkeley you can go to Front Row Video and see a PC hooked to a network, running specialized application software to make the store efficiently check video tapes in and out using bar codes. That's a vertical market application. It amuses me how the place has all this computer paraphernalia and still turns out to be the most expensive rental place in the area. I guess someone has to pay for the computers.

Company and, finally, to the Commonwealth Motor Car Company in 1919. And you think the computer business is nuts.

Meanwhile the taxi industry was merging like there was no tomorrow. Checker Taxi of Chicago was one of the biggest. They needed a more rugged cab and went to Commonwealth with a request for a special car made just to be a toughened taxi. Soon Commonwealth became a specialist in making cabs. It renamed itself into the Checker Cab Manufacturing Co.

The vertical market paid off. In 1924, Checker made 4000 cabs. A big deal in those days. To make itself more entrenched in the vertical market, it bought Checker Cab Sales Corp. in New York and cornered the market for cabs in that city. By 1928, redesign and constant improvement resulted in the famous Checker model "K." Equipped with shatterproof glass and hydraulic brakes, the car was considered by experts at the time as the greatest car ever built. It sold for \$2500.

By now Checker not only made cabs, but owned cab companies throughout the country. In 1930 the Checker Cab was appointed with down-filled cushions, and the cabs were as stylish as the finest limousine.

Checker even made money in the Depression

when no other car maker could do it. The lure of the profits to be made in this vertical market suckered General Motors to make a do-or-die attempt to gain a foothold by introducing a taxi from its General Cab division. They offered them to all comers in New York for \$360 down and no contract to pay the remainder. This sleazy trick backfired, as the sharp New York cabbies bought the cabs, then ran them into the ground and returned them to GM with tires worn bald and engines ruined. They took their easy profits to buy a new Checker.

Checker continued to dominate the cab industry for years. As the economy changed and the 1979 recession set in, all of a sudden some bean-counters pulled the plug. The last Checker Cab rolled off the assembly line on July 12, 1982.

The business fluctuated too much. Ford, GM and Chrysler sold cheaper stripped-down versions into the market. Ralph Nader even attacked Checker. I think the fact that the Checker drove for years and years was one possible reason for its demise. Not enough turnover. New York cabbies, though, differ on this issue. Many say the last few were very shoddy and the transmissions in particular weren't very good. Whatever the case, the Checker you see (which was originally designed

The classic vertical market story is in a business that historically parallels and predates the computer industry — the automobile industry. We study it and we see our future. The vertical market specialist is the Checker Motor Co. in Kalamazoo, Michigan.

in 1956 and resembles other car models of that year, specifically a Buick) is the last of a legend. Enjoy every ride you can. There are a very few Checkers left in New York. A few more can be found in Chicago.

Think of it as riding in a vertical market product. Then look over in the next lane at the Chevy Caprice. There goes another Chevy. And another! So much for vertical marketing as an emphasis. Perhaps it should only be seen as a sideline. That's where it's at. A sideline. □



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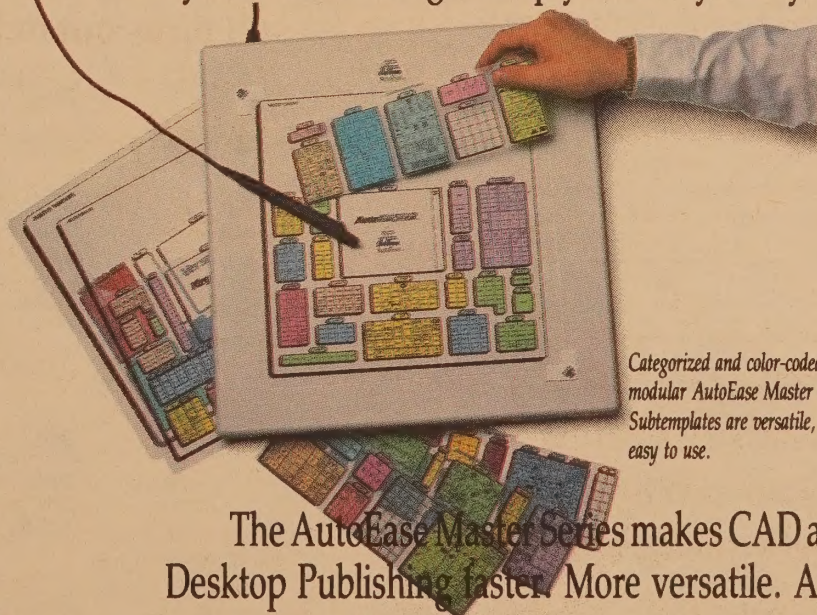
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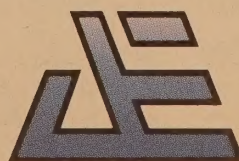
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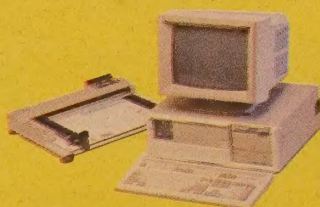
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